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MECHANICK EXERCISES:

Or, the Doctrine of

Handy-works.

Applied to the Art of

Printing.

The Second VOLUMNE.

By *Joseph Moxon*, Member of the Royal Society, and *Hydrographer* to the King's Most Excellent Majesty.

LONDON.

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MECHANICK EXERCISES:

Or, the Doctrine of

Handy-works.

Applied to the

Compositers Trade.

PREFACE.

IN *a ſtrict ſence, a good* Compoſiter *need be no more than an Engliſh Scholler, or indeed ſcarce ſo much; for if he knows but his Letters and Characters he ſhall meet with in his* Printed *or* Written Copy, *and have otherwiſe a good natural capacity, he may be a better* Compoſiter *than another Man whoſe Education has adorn'd him with* Latin, Greek, Hebrew, *and other Languages, and ſhall want a good natural Genius: For by the Laws of* Printing, *a* Com-

Compositer *is strictly to follow his* Copy, *viz. to observe and do just so much and no more than his* Copy *will bear him out for*; *so that his* Copy *is to be his Rule and Authority*: *But the carelesness of some good Authors, and the ignorance of other Authors, has forc'd* Printers *to introduce a Custom, which among them is look'd upon as a task and duty incumbent on the* Compositer, *viz. to discern and amend the bad* Spelling *and* Pointing *of his* Copy, *if it be English*; *But if it be in any Forrain Language, the Author is wholy left to his own Skill and Judgement in* Spelling *and* Pointing, *&c. his* Copy, *and* Correcting *the* Prooves, *unless they be* Latine, Greek *or* Hebrew, *for to those Languages there is generally a* Corrector *belongs to the* Printing-House: *And how well other Forrain Languages are* Corrected *by the Author, we may perceive by the English that is* Printed *in Forrain Countries.*

Therefore upon consideration of these accidental circumstances that attend Copy, *it is necessary that a* Compositer *be a good English Schollar at least*; *and that he know the present traditional* Spelling *of all English Words, and that he have so much Sence and Reason, as to* Point *his Sentences properly*: *when to begin a Word with a* Capital Letter, *when* (*to render the Sence of the Author more intelligent to the Reader*) *to* Set *some Words or Sentences in* Italick *or* English Letters, *&c. But of this more at large in* ¶. 6.

Thus much of his qualifications: *Now to his Taask.*

The Master-Printer *gives him his* Copy, *and directs him to his standing Place or* Case, *and orders him* Letter *to Work withal.*

If his Case *want* Papering, *as all* New Cases *do, and many times old, He must* Paper *his* Case. §. 22.

§. 22. ¶. 1. *Of* Papering *and* Laying *the* CASE.

THE *Compoſſter* ſends the Boy to the *Maſter-Printer*, or to him that attends the Warehouſe, for *Half a Quire*, or a *Quire*, or ſo much as he gueſſes he ſhall want, of good ſtrong *Waſt-Paper*, and cuts it into ſo many ſeveral Scantlins as the number of each Scantlin of his *Boxes* in his *Caſe* are; but he cuts his *Papers* ſo large, as each *Paper* may ly double in its *Box*, and have enough beſides to fold almoſt half way towards the middle of each *Paper*, and alſo enough to turn up again againſt the ſides of each *Box*, about the thickneſs of a *Pica*, or an *Engliſh*, above the bottom of the *Box*; and its *Paper* on all its ſides, except the upper ſide of the *Box*, which, as near as he can, he leaves no turning up of *Paper* to, becauſe the tendency the whole *Caſe* has downwards by its a-ſlope poſition, the *Letter* in each *Box* tends alſo downwards, and therefore is not ſo apt to get between the *Paper* and that ſide of the *Box*, as between the *Paper* and the other ſides of each *Box*: But yet that upper ſide, and all the other ſides of the *Box*, he *Papers* ſo ſmooth and tight, that he leaves no wrinckles in the turnings up againſt the ſides of the *Box*; but if there be any, drives them carefully into the corners of the *Box*, leſt his *Letter*, eſpecially if it be Small, ſhould get into the openings of thoſe Wrinckles

Wrinckles, and in time work their way under the *Paper*.

Having *Paper'd* his *Case*, he considers how the rest of the *Cases* in that *House* ly, *viz.* into what *Boxes* the several *Letters* are to be dispos'd; for they are not in every *Printing-House* dispos'd alike, and accordingly he applies himself to fill his *Case* with *Letter*.

If a *Fount* of *New Letter* be brought home from the *Founders*, the *Compositer* has no more to do, but to fill each *Box* in his *Case* with so many of each sort as each *Box* will hold, and fall to *Composing* till he has emptied his *Case*; which the same way he fills again, and *Composes* on again till the whole *Fount* be *Set up*: But when he has no longer any *New Letter* to work upon, he must *Destribute* some former *Set Forms* to fill his *Case* withal.

And before I shew you the Rules and Method of *Destributing* and *Composing*, it will be necessary I say somewhat of the *Case*, and *Laying* it.

By the *Case* is meant, in *Printers* common diolect, a *Pair of Cases*, viz. the *Upper* and the *Lower-Case*: They are described with the most common way of *Laying* them, in Plate 2. A the *Upper Case*, B the *Lower Case*. The *Upper Case* is devided into Ninety eight *Boxes* all of equal size; but the *Lower Case* is devided into but Fifty six *Boxes*, and those of four different sizes (as you may see in the Figure) by the Frame and Black streight Lines representing the several Partitions. The manner how the several sorts of *Letters* are dispos'd in the several *Boxes*, is called, *Laying of the Case*, where in the *Upper Case* you see

Capital

Capital A Ly in the uppermoſt *Box* on the Left-hand, B C D E F G ſucceeding it in that Row to the Right hand, as far as the broad Partition in the middle of the *Caſe*; under *Capital* A lies *Capital* H, I K L M N O orderly ſucceeding it to the right hand, as far as the great Partition in the middle of the *Caſe*: But the Figure being plain, I refer you to it.

The *Lower Caſe* is not devided according to an orderly ſucceſſion of the *Alphabet*, in Ranks; for thoſe *Letters* that are moſt uſed are laid in the biggeſt *Boxes*, about the middle of the *Caſe*, That the *Compoſiters* hand may have the quicker acceſs to them. See the Figure.

¶. 2. *Of* Rincing a Form of Letter, *in order to* Deſtributing *it*.

After the *Preſs-man* has *Waſh'd a Form*, he brings it to the *Rincing-Trough*, and rears it a little a-ſlope on one of the ends of the *Chaſe*, either againſt a convenient place of the *Frame* of the *Rincing-Trough*, or towards the Wall; for ſo plac'd, the *Face of the Letter* runs leſs hazzard of receiving dammage, and the *Form* ſtands in a proper poſition for the *Compoſiter* to rear a *Letter-board* againſt the backſide of it.

The *Compoſiter* therefore brings a *Letter-board*, and puts the Face of it againſt the back-ſide of the *Form*, and draws *Form* and *Letter-board* toward him, leaning them againſt his Knee till he can conveniently graſp about the middle of the ſides of the *Chaſe* and *Letter-board* between his Fingers under the *Board*, and his Thumb upon the *Chaſe* and *Furniture*: And if

if the *Form* be not too heavy, in this poſition he lifts it up to the *Rincing Trough*; but if it be too heavy, as moſt commonly it is, He lifts it up in this poſition till he brings the upper edge of one of the long ſides of the *Letter-board* to reſt between his Belly and Stomach, and then ſets *Letter board Form* and all in the *Rincing-Trough*, letting the hither ſide of the *Board* reſt upon the hither Ledge of the *Rincing-Trough*; that the *Form* may tilt downwards.

When it is on the *Rincing Trough*, he gets the *Mallet* and *Shooting-ſtick*, and holding the *Mallet* in his Right hand, and the *Shooting-ſtick* in his Left, he places the Foot of the *Shooting-ſtick* (that is the thin end of it) againſt the narrow ends of each *Quoin*, and knocking with the *Mallet* upon the *Head* of the *Shooting-ſtick* as gently as he can to drive them back, he looſens every *Quoin*; and this is call'd *Opening of the Quoins*, *Unlocking of the Quoins*, *Opening of the Form*, *and Unlocking of the Form.*

But in the *Unlocking of the Form*, he obſerves theſe three Circumſtances:

Firſt, He begins at the *Foot-Quoins* of a *Quarter*, and looſens them; then with his Fingers and Thumb he puts them up again pretty ſtiff; yet not ſo ſtiff, but that he can again with his Fingers and Thumb looſen them.

The Reaſon why he opens the *Foot-Quoins* firſt, is, becauſe the *Letter* is leſs ſubject to *Squabble* between *Line* and *Line* (that is *Head* and *Foot*, the length of the *Page*) than it is between ſide and ſide (the breadth of the *Page*): For all the *Letters* of a *Line* being of the ſame *Body*, are all of the ſame ſize

in

in their parallel bounds; and the two ſides of the *Letter* being generally conſiderably broader than the Thickneſs of the *Letter*, are held by their breadth and flatneſs faſter and cloſer together in a motion towards the *Head* or *Foot* of the *Page*, than they are a-thwart the *Lines*, there being generally many thin *Letters* and *Spaces* in a *Line*, whoſe thickneſs is very little conſiderable to their *Body* or parallel bounds: So that if the *Form* be looſe, thoſe Thin *Letters* and *Spaces* not having a Thickneſs proportionable to their *Body* to keep them in their proper Square, their Thin Edges twiſt them about, and one *Letter* very ſeldom twiſts alone, but forces many others (perhaps in ſome *Lines* above and below it, and on each ſide of it) out of its ſquare poſition.

But the *Foot-Quoin* being thruſt up again with the Fingers, that the *Lines* may joyn again after they were knock'd open with the *Mallet* and *Shooting-ſtick*, make the Thin *Letters* in the *Lines* leſs ſubject to *Squabble* (as not having the room to twiſt about) becauſe *Opening* the *Foot-Quoins* afterwards with the Fingers, offers leſs violence than the ſmart knock of a *Mallet*.

Secondly, He holds the *Shooting-ſtick* much aſlant to the *Letter-board*, ſo as the Foot of it touch not the Face of the *Letter-board*, leſt with knocking upon the *Shooting-ſtick* (it being hard Wood, and the grain running downwards) the Foot ſhould batter and ſpoil the Face of the *Letter-board*.

Thirdly, He *Unlocks* the outermoſt, *viz.* the broadeſt *Quoins* firſt, and then with his Fingers thruſts them pretty cloſe up again, unleſs the *Form* he *Unlock*

lock be a great *Letter*, for then he obſerves not this Circumſtance ſo nicely; then the other *Quoin*, or (according to the bigneſs of the *Form*) *Quoins*.

Having *Unlock'd* the *Foot Quoins*, he *Unlocks* the *Side Quoins* in the ſame manner and order; and being provided with a Pail, or a great Pan full of fair Water, and a *Wooden Diſh*; he takes a Diſh full of fair Water, or more, if the *Form* require it, and throws it upon the *Form*, till he have ſo well wetted it, that the Water may ſink between the *Letters* in the *Form*, to hold and keep every *Letter* contiguous to its next.

Then he *Opens* the *Quoins* pretty looſe, the *Foot Quoins* firſt, and in *Opening* them he conſiders the *Body* of the *Letter*, whether it be Great or Small, and accordingly he *Opens* them; for at the *Foot* he *Opens* them about the thickneſs of the *Body* of the *Letter*: But on the *Sides* not above half the *Body*.

By *Opening*, you muſt now underſtand removing the *Quoins*, till they ſtand looſe, or diſtant from the *Furniture*, the *Body*, or half the *Body* of the *Letter*.

He *Opens* but one *Quarter* at a time, *viz.* one of the hithermoſt *Quarters*, till he have well *Rinc'd* that, which when he has done, with his Fingers he thruſts the *Quoins* of that *Quarter* ſtiff up again, aſwell that it may be the leſs ſubject to *Squabble* or *Break*, as that the Water may the better be ſqueezed out from between the *Letter*; when he comes to *Deſtribute* it.

Having thus *Opened* the *Quoins*, He alſo *Opens* the *Furniture*, viz. the *Head ſticks*, and the *Inner Side-ſticks* and *Gutter-ſticks*, if the *Form* have any, to make himſelf the more room to *Open* the *Letter*: The Balls of the three firſt Fingers of each Hand he places near

near the ends of the *Head-ſtick*, and *Opens* it by taking as good hold as he can of ſo much of it as ſtands above the *Croſs* of the *Chaſe*, drawing the *Head-ſtick* towards him about half the *Body* of the *Letter*. And in the like manner he *Opens* the inner *Side-ſticks*, but draws them towards him about a quarter of the *Body* of the *Letter*. Yet ſometimes this Office is not perform'd with the three Fore-fingers of each Hand, but with the two Thumbs; and this is when the *Quarter* of *Letter* ſtands between the *Head* or *Side-ſticks*, and then he places his two Thumbs near the ends of the *Sticks*, as before he did his Fingers, and thruſts the *Sticks*, *Letter* and all, from him.

And having *Opened* the *Quoins* and *Furniture* of one *Quarter*, he alſo *Opens* the *Letter*, that it may receive the Water more plentifully: He *Opens* the *Letter*, by fixing the Balls of his Fingers of both his Hands upon the *Face*, and ſo thruſting and joggling it from him, and drawing it towards him from *Head* to *Foot*, and from *Side* to *Side*, and then throws a good Diſh full or two of Water upon it, and with the Balls of his Fingers ſtill rubs upon the *Face* of the *Letter*, that by ſhaking and joggling the *Letter*, the Water (e're it ſink through the *Letter*) may the better *Rince* away that *Ly* that by the *Preſsmans* waſhing ſoak'd into it: And this joggling the *Letter*, and throwing on freſh Water he continues till the Water that ſpurts out from between the *Letters* by this joggling, be as clear as it was when it was thrown on, and then, and not till then, he knows his *Quarter* is well *Rinc'd*: Then with his two Thumbs, one placed

placed on the ſide of the *Foot-ſtick* and the other on the ſide of the *Side-ſtick*, as near as he can, he thruſts both at once towards their oppoſite *Croſs*, and ſo thruſts the *Letter* and *Furniture* cloſe up again: And that the *Letter* may not be in danger of *Squabbling* or *Breaking*, he thruſts the *Quoins* looſly up again alſo.

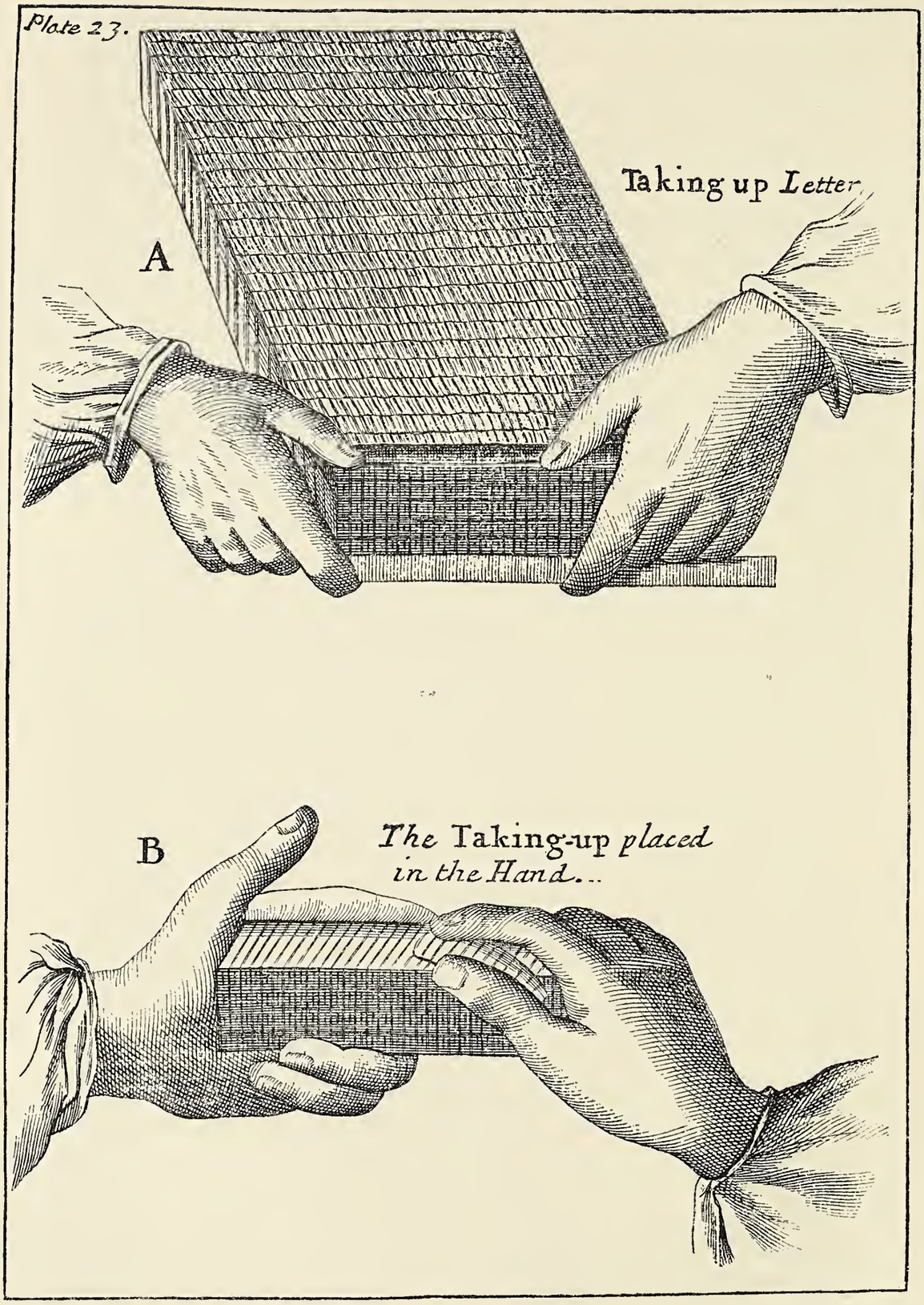
As he *Open'd* and *Rinc'd* this firſt *Quarter*, he *Opens* and *Rinces* the others.

The reaſon why he *Opens* and *Rinces* the hithermoſt *Quarter* firſt, is, becauſe the Water that deſcends from the hithermoſt *Quarters* does in a degree help to Rince the nethermoſt alſo.

Having thus *Rinced* the whole *Form*, and with his Fingers ſhut it up again, he lets it ſtand a little while to drain; then graſping the two ends of the *Letter-board* a little beyond the middle, with his Fingers underneath, and the Thumb-balls of his two Hands upon it, he ſets one ſide of the *Letter-board* againſt the bottom of his Stomach, and carries *Letter-board*, *Form*, and all to the *Deſtributing Frame*.

Then he falls to *Stripping* of one *Quarter* firſt: Taking the *Quoins* quite out, and laying them upon the *Face* of the *Letter*, either on the ſame or another *Quarter* (if he *Strips* but one *Quarter* at once) with their ends ſtanding the ſame way they ſtood in the *Chaſe*, and in the ſame order of ſucceſſion; then he removes the *Side* and *Foot-ſticks* to their reſpective ſides, cloſe to the inſide of the *Chaſe*, and again removes the *Quoins*, laying them in the ſame order he laid them upon the *Face* of the *Letter*, upon the upper ſides of the *Side* and *Foot-ſticks*, and *Chaſe*; then

Plate 23.



then, as I told you before, how he *Opened* the Inner *Side-ſticks*, juſt ſo again he not only opens them, but by the *Side* and *Head-ſticks* he draws or ſlides the *Letter* from the *Croſſes*, that he eaſily takes them out if he pleaſes; or if he have room enough to come at the *Letter* without, he lets them ſtay in.

Thus the firſt *Quarter* is *Stript*, and ſo the other *Quarters* ſucceſſively, in order to be *Deſtributed.*

¶ 3. *Of* Deſtributing.

The *Compoſiter* ſeeks among the *Furniture* for a *Riglet*, a little longer (about a *Pica* or *Engliſh*) than the *Line* of the *Page* he is to *Deſtribute*; or elſe he cuts a *Riglet* to that length (this *Riglet* is called a *Deſtributing-ſtick*) and coming to his *Stript Form*, or *Quarter* of the *Form* he is to *Deſtribute*, he places one flat ſide of the *Riglet* againſt the Head of the *Page*, and claps the Balls of his two Fore-fingers behind it, and the inner Joints (next his Fore-fingers) of his middle Fingers he claps againſt the ends of ſo many *Lines* as he intends to *Take up*, ſuppoſing it *Pica*, about Seven; and preſſes them pretty cloſe to the ſides of the *Lines*: Then with the ends of the Balls of his two Thumbs he parts that number of *Lines* from the reſt of the *Page*, by preſſing gently towards his *Riglet* or *Deſtributing-ſtick* upon the *Face* of the *Letter* of the fartheſt *Line*, which, if the Joints of his middle Fingers preſs pretty hard towards each other at firſt, eaſily part, and he may open that number of *Lines* ſo far from the reſt of the *Page*, that he may get the Balls of his Thumbs far

far enough upon the ſhank of the *Letter*: So that the preſſing the *Lines* yet a little harder between the Joints of his middle Fingers, and pinching with his Thumbs the *Letter* hard againſt the *Riglet*, with a quick jerk he rears that *Taking-up* upon his *Deſtributing-ſtick*. See *Plate* 23. *at* A.

Having it upon his *Deſtributing-ſtick* between both his Hands, with the *Face* of the *Letter* from him, he diſingages his middle Fingers, and with his fore Fingers and Thumbs holding the *Riglet*, and now the Top of his *Taking-up* pretty looſly between them, he turns (as on two moving Axiſes) the ends of the *Lines* that were towards his Right Hand, and guides them to the Thumb-ball of his Left Hand: Thus the *Face* of the *Letter* is turn'd towards him; then bowing the inner Joynt of the middle Finger of his Left Hand (which before preſt the left ſide of the *Line*) under the middle of the *Riglet* he takes the weight of the *Taking-up* upon it, which yet he eaſes as he liſts, by mounting the now Right Hand end of the *Lines* a little above an Horizontal level, and depreſſing the Left Hand ends a little below; ſo that now he he has his *Taking up* in his Hand, with the *Face* of his *Letter* towards him, and the *Notches* upwards, he goes with it to his *Caſe*, and places himſelf againſt the middle of it. See *Plate* 23. *at* B.

Then clapping the Ball (or if he will take off more than the length of the Ball) of his middle Finger of his Right Hand, of the ſecond Joint of that Finger, againſt the bottom of the uppermoſt *Line* of his *Taking up* towards his Right Hand, and his fore Finger about the middle of the ſhank of the *Letter*, he

he ſlides or draws towards him about an Inch or an Inch and an half of that *Line* upon the Ball of his Thumb, which is placed at the *Face* of the *Letter* to receive it: And as it comes off the *Taking up*, he with his aforeſaid two Fingers and Thumb diſpoſes it ſo among his Fingers that he gathers the Ball of his fourth Finger under the bottom of the *Letter*, and then he brings what he has taken off towards his Sight to read; then with a ſleight thruſting the Ball of his Thumb outwards, and drawing inwards the Balls of his fore and middle Fingers, he ſpreads and *Squabbles* the ſhanks of the *Letters* between his Fingers askew; and remembring what *Letters* he read, he nimbly addreſſes his Hand with a continued motion to every reſpective *Box*, which his Fingers, as they paſs by, lets a *Letter* drop into, till his *Taking off* be quite *Deſtributed.*

Having *Deſtributed* that *Taking off* he makes another *Taking off* as before, and ſo continues his *Takings off* till his whole *Taking up* be Diſtributed: And thus he *Takes up* and *Deſtributes* till his *Caſe* is full.

If the *Form* were not well *Rinc'd*, the ſhanks of of the *Letters* will be more or leſs ſlippery, and with long *Deſtributing* will make the Balls of the Fingers and Thumb ſupple, by the wetneſs of the *Letter* and ſharpneſs of the *Ly*; and conſequently the grain of the skin will be made clumſie, and thoſe Joints feeble; ſo that they will not ſo well faſten upon the ſides of the Shank to command the *Letter*, and draw it askew, or be ſo nimble at diſpoſing them into their ſeveral *Boxes*.

This

This happens moſt if they work upon ſmall *Letter*, and that old, and the *Ly* old too, for then the *Ly* will have much *Inck* mingled in it: And the *Compoſiter* will have much ado to *Rince* his *Form* ſo clean but that the *Letter* will be ſlippery, and conſequently not ſpread, as aforeſaid. But againſt it they may uſe a remedy, which is, to have a piece of Allom about the bigneſs of a Haſel-nut, lye in one of the *Boxes* of the *Caſe*; for by feeling that now and then, the dilated pores of their Fingers are again contracted, and fit to do their office: For by the greaſineſs of the *Letter*, the grain of the Skin of the Fingers were ſo dilated, that the *Compoſiter* could not ſo actively draw the Shanks of the *Letters* askew, as aforeſaid.

The *Compoſiter*, if conveniences ſuit, chuſes to *Deſtribute* his *Letter* over Night, that he may have a *dry Caſe* (as he calls it) to work at in the Morning, becauſe Wet *Letters* are not ſo ready and pleaſant to pick up as Dry; and beſides are apt to make the Fingers ſore, eſpecially if the *Ly* be not ſo well *Rinc'd* from the *Letter* as it ſhould be. In the Winter, when he *Deſtributes* in the Day time, he commonly brings the *Lower Caſe*, when full of *Letter*, to the Fire to dry, rearing the farther ſide of the *Caſe* a little upwards: And when it is well dryed, he ſets it again upon the *Frame*.

¶ 4.

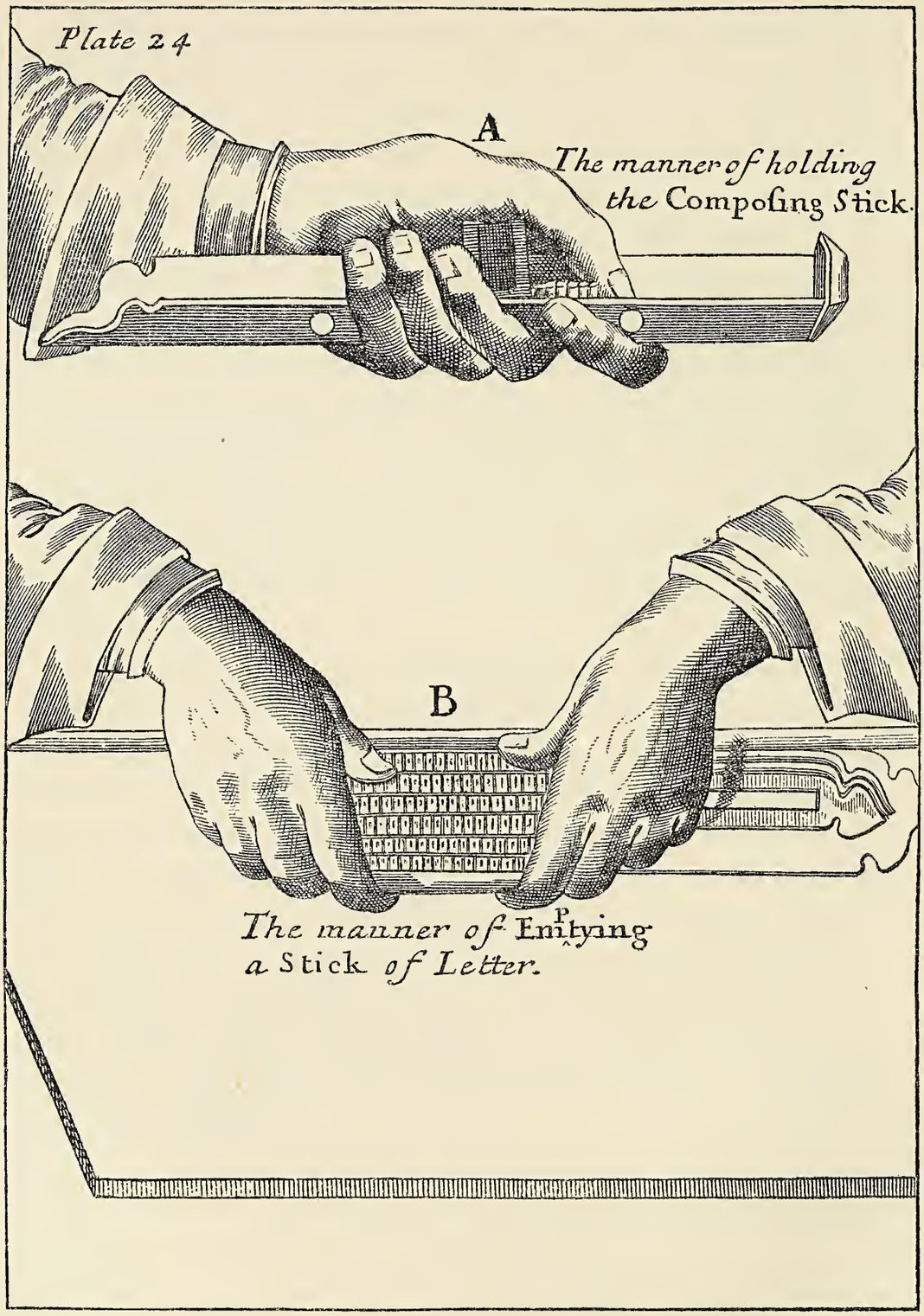


Plate 24
A
The manner of holding
the Composing Stick.
B
The manner of Emptying
a Stick of Letter.

¶ 4. *Of* Compoſing.

The *Compoſiter* now addreſſes himſelf to *Compoſing*: And looking a little over his *Copy*, to ſee how it pleaſes him, for he runs different fortunes, either of good or bad *Copy*, viz. well or ill writ, if it be a *Written Copy*, or much *Italick*, *Latin* or *Greek*, or *Marginal Notes*, or few *Breaks*, *&c.* for this he likes not in his *Copy*: But a *Printed Copy*, or a fair Written Hand, and full of *Breaks* pleaſes him well, and is by *Compoſiters* call'd *Good Copy*, *Light*, *Eaſie Work*; when the former they call *Bad*, *Heavy*, *Hard Work*: And if a Price be already made for a whole Book, the Good and Bad is done at the ſame Price.

If the *Meaſure* be already made, that is, if he was already upon that *Work* before, and his *Compoſing-ſtick* be ſet to the *Meaſure* of that *Work*, he needs not, or muſt not alter his *Compoſing-ſtick*: But if his *Meaſure* be not made, he muſt unskrew the *Skrew* of his *Compoſing-ſtick*, and ſlide the *Cheeks* nearer to, or farther off the *Head* of his *Compoſing-ſtick*, till he have exactly fitted his given *Meaſure*.

If it be a *Printed Copy* he is to Work on, and his Work muſt run *Line for Line* with his *Copy*, he then without more ado, *Sets* or *Compoſes* the fulleſt *Line* he finds in his *Copy*, and ſlides up the *Cheeks* of his *Compoſing-ſtick*, and pinches that *Line* between the *Cheeks* and the *Head*, till it ſtands as ſtiff or hard in the *Stick* as he intends to *Juſtifie* all the reſt of his *Lines*: Then ſcrews up the *Compoſing-ſtick*.

Juſti-

Juſtifying (in *Compoſiters* Language) is the ſtiff or looſe filling of his *Stick*, for if it be fill'd very ſtiff with *Letters* or *Spaces*, they ſay it is *hard Juſtified*, if looſly, they ſay it is *looſe Juſtified*.

Having the *Meaſure* fitted, he places the *Galley* on his *Upper Caſe* on the Right Hand, for thoſe *Boxes* are ſeldomeſt uſed, becauſe in them are placed only the *Latin ſorts*, or ſometimes the *Small Capitals*, *Aſtronomical Signs*, &c.

He places his *Galley* ſo, that the Left Hand corner of the bottom of its Frame ſtands lower upon the *Caſe* than any of the other Corners, for in that poſition the *Letters* at the end of every *Line* ſtand ſafeſt from falling, as leaning towards the reſt of the *Page*.

Some *Compoſiters* uſe *Viſorums*, as is deſcribed in *Plate* 2. at i. Therefore pricking the point of the *Viſorum* moſt commonly upon the Border or Frame of the *Caſe* on the Left Hand about the *&-Box*, they fold the *Leaf* of *Copy* they *Compoſe* by, ſo as the bottom of it may reſt upon the Square-Shoulder near the bottom of the *Viſorum*; then with two pieces of *Scaboard* tyed together at one end, they claſp both the *Copy* and *Viſorum* between theſe two *Scaboards*, which two *Scaboards* pinch the *Copy* and *Viſorum* faſt enough to keep the *Copy* in its place, and at the ſame time alſo ſerves for an *Index* to direct the Eye to every *Line*, as the *Compoſiter* moves it downward.

After this preparation, the *Compoſiter* falls to *Compoſing*. But firſt reads ſo much of his *Copy* as he thinks he can retain in his memory till he have *Compoſed* it, as commonly is five or ſix words, or ſometimes a longer Sentence. And having read, he falls

falls a Spelling in his mind; yet ſo, that his Thoughts run no faſter than his Fingers: For as he ſpells A, he takes up A out of the A *Box*, as he names n in his thoughts, he takes up n out of the n *Box*, as he names d in his thoughts he takes up d out of the d *Box*; which three *Letters* ſet together make a Word, viz. And; ſo that after the d he ſets a *Space*: Then he goes on to the next *Word*, and ſo *Compoſes* on, *Setting* a *Space* after every *Word* till the *Words* come to the end of the *Line*, for then he ſets no *Space*.

When he *Compoſes* the *Letters* he holds the *Compoſing-ſtick* in his Left Hand, placing the Second Joynt of his Thumb over the moving *Cheek* of the *Stick*, and the end of the Ball of his Thumb reaches down to the bottom of the *Cheek* and *Stick*; ſo that with the end of the Ball of his Thumb he gently preſſes the *Letter* cloſe to the *Cheek*, and keeps the *Letters* tight and ſquare together, as he places them in the *Stick* ſucceſſively. *See Plate* 24. *at* A.

And as his Eyes are very quick in reading his *Copy*, and in ſhifting its Viſual Ray to the ſeveral *Boxes* he is to have a *Letter* out of, ſo is his choice what *Letter* to take up very ſudden; for though the *Box* be full of *Letters*, yet in an inſtant he reſolves and pitches his Fingers upon that one, which for its poſture and poſition his Fancy reckons lyes moſt commodious for his immediate ſeizing. For poſition, he generally chuſes that which lies uppermoſt, becauſe it is readieſt at Hand to ſnatch up: And for poſture, that which lies with its *Face* towards his Right Hand, becauſe catching at the *Letter* near the *Face*-end of the *Shank*, he by an accuſtomed ſleight, in his Fingers while

while it is coming to the *Stick*, diſpoſes it ſo, that as the bottom of the Shank goes directly forwards, towards the bottom of the *Stick*, ſo the *Notch* of the *Letter* ſhall alſo be placed upwards.

Moſt *Compoſiters* uſe a *Compoſing-Rule*, which is only a piece of a *Braſs-Rule* cut to the length of the *Meaſure*, with a ſmall Ear left at either end, to take it out by when the *Line* is full, and to lay it upon the *Compos'd Line*, to *Set* ſucceſſively a ſucceſſion of *Lines* upon, till the *Stick* be full.

This *Rule* is very commodious to Work with, becauſe the *Letter* ſlides eaſier and ſmoother down to the *Back* of the *Stick*, than it will upon a *Line* of *Letters*: Beſides, the *Letters Compos'd* on it ſtand ſtreighter and truer in *Line*, and are leſs ſubject to *Hang*, than thoſe *Compos'd* on a *Line* of *Matter*; unleſs with a *Riglet* (as that they many times do) they rub pretty ſtrongly along the *Line* they have *Compos'd*, which is a labour more than needs, and the loſs of ſome time to make the Work more unpleaſant.

Having *Compoſed* one *Line*, if it ends with a *Word* or a *Syllable* and a *Diviſion*, and juſt fill the *Meaſure*, it needs no more *Juſtifying*; but if the *Line* conclude not as aforeſaid, then he puts a *Space* more between every Word, or ſo many Words as will fill up the *Meaſure* pretty ſtiff, viz. *Juſtifie* the *Line*. But if the *Line* be not yet *Juſtified*, he puts another *Space* between every Word, or between ſeveral Words, till the *Line* be *Juſtified*: So that here is now three *Spaces*, and ſtrictly, good Workmanſhip will not allow more, unleſs the *Meaſure* be ſo ſhort, that by reaſon

reaſon of few *Words* in a *Line*, neceſſity compells him to put more *Spaces* between the *Words*. This often happens in *Marginal Notes*, where the *White* between *Words* is often as great or greater than between *Line* and *Line*.

Theſe wide *Whites* are by *Compoſiters* (in way of Scandal) call'd *Pidgeon-holes*, and are by none accounted good Workmanſhip, unleſs in ſuch caſes of neceſſity, as aforeſaid.

And as *Lines* may be too much *Spaced-out*, ſo may they be too cloſe *Set*: It may be accounted too cloſe *Set* when only a *Thin-ſpace* is ſet between Words, eſpecially if no *Capital Letter* follows the *Thin-ſpace* or *Point* go before it. *Thin-ſpaces* being intended and *Caſt* only that the *Compoſiter* may *Juſtifie* his *Lines* the Truer, and not to ſerve for convenient diſtinction between Words; yet do ſome *Compoſiters* too often commit this error, rather than put themſelves to the trouble of *Spacing* out a *Line*, where many *Spaces* muſt be uſed to *Space* it out.

A good *Compoſiter* takes care not to *Set* too Cloſe, or too Wide; for if he *Set* too Cloſe, and ſhould happen to leave out a Word or two, it will give him a great deal of trouble to get thoſe Words in; Nay perhaps when he comes to a *Break* he drives out a *Line*, for which *Line* perchance he may be forc'd to *Over-run* all the *Pages* that are *Set* forwards upon that *Matter*. And if he *Sets* too Wide, and he chance to *Set* a Word or two twice over, he may be forc'd to make *Pidgeon-holes* e're he come to a *Break*, and then perhaps his *Break* is got in too, and his *Page* a *Line* too ſhort, and he forc'd to *Over-run* ſeveral

ral *Pages* e're he can drive that *Line* out. As I ſhall farther ſhew you when I come to the ¶ of *Correcting*.

In *Juſtifying* his *Line* he takes great care that it do not *Hang*: It is an unproper Term, yet grown into Uſe, for when the *Letter* ſtands askew, and not directly Square, they ſay it *Hangs*. New *Letter* is moſt ſubject to *Hang*, eſpecially if not very ſmoothly *Dreſt*; Becauſe the leaſt Bur, or ſharpneſs of its Angles, may catch in the Burs or Angles of the *Letters* that ſtand next them, and ſo make them ſtand aſlope, and one *Letter* ſtanding aſlope is very ſubject to make all the other *Letters* in that *Line* ſtand aſlope too. Therefore if he find his *Letter Hang*, while his *Line* is yet *looſe*, viz. Unjuſtified, he gently with the Ball of the Thumb of his Left Hand, thruſts the top of the ſhank of the *Line* where it *Hangs*, moving the *Letter* ſomewhat from him, towards the farther end of the *Stick*, and with the Balls of the two Fore-fingers of his Right Hand pats upon the *Face* of the *Letter*, till he have got them into an upright poſition. He moves or drives the top of the Shank of the *Letter* from him, becauſe generally the placing the Ball of his Thumb on the top of the ſhank of the *Letter* when he *Compoſes* (as was ſhewn before) is ſubject to draw the *Letter* askew towards him, but that his care commonly prevents it: Yet if by chance the *Line* ſhould *Hang* from him, then he with the Ball of his Thumb as aforeſaid, draws the *Letter* towards him, to ſet it upright.

Here

Here is now one *Line Compos'd*: And as he *Compos'd* that *Line*, ſo he *Compoſes Line* upon *Line* till his *Stick* be full: When his *Stick* is full, he *Empties* thus; He lays his *Stick* down upon his *Lower Caſe*, with the bottom of his *Stick* againſt the hither *Ledge* of the *Caſe*, and the *Face* of the *Letter* upwards; being provided of a *Riglet* juſt the Length of his *Line*, he lays his *Riglet* againſt his laſt *Line*, and places the Balls of his two Fore-fingers behind the *Riglet*, near the middle of it, if the *Line* be not too long, and then only as near the middle as he can to command it with his Fore-fingers; and he places the Balls of his Thumbs againſt the firſt *Line* in his *Stick* as far below the *Face* of the *Letter* as he can, and he places firſt the Joints of his middle-fingers againſt the Sides of the *Letter* at the two ends of the *Line*, ſo as I ſhewed you he did when he was *Taking up* his *Letter* to *Deſtribute* it; and in this poſture pinching the *Letter* between his Thumbs and his Fore-fingers, and and ſqueezing his two middle fingers towards each other, he leans the *Letter* in the *Stick* almoſt flat upon the *Riglet*: But if his *Lines* were *Hard Juſtified*, he cannot perhaps with the firſt leaning the *Letter* back get them clear out of the *Stick*, therefore he again wriggles the *Stick* of *Letter* forwards and backwards, till he gets them quite out. *See Plate* 24. *at* B.

Having gotten them out, and in this poſture faſt between his Thumbs and Fingers, and the *Letter* leaning almoſt flat upon his *Riglet*, he directs both his hands together to his *Galley*, and nimbly claps that *Stick* of *Letter* down into the *Galley*; placing the firſt

firſt *Line* cloſe and upright againſt the lower ledge of the *Galley*, and the begining of his *Lines* cloſe and upright againſt the left hand *Ledge* of the *Galley*, and then diſingages his Fingers and Thumbs, and leaves his *Riglet* ſtanding in its place till he have occaſion to uſe it in like manner for the next *Stick* of *Letter*.

As he *Set* this *Stick* of *Letter*, ſo he *Sets* on till his *Page* is *Out*, Remembring after the laſt *Line* of every *Page* to ſet a *Direction*: That is, he *Sets* a *Line* of *Quadrats* and at the end of it the firſt word of the next *Page*, or if the Word be very long and the *Line* very ſhort, two *Syllables*, or ſometimes but one of that *Word*. And if it be the *Firſt Page*, viz. the firſt *Page* of that *Sheet*, he *Sets* a *Signature* about the middle of the *Line*, or rather a ſmall matter nearer the end than the middle is, (becauſe when the *Sheets* are wrought off and gather'd, they *Collation* ſomething quicker: The *Collationer* not being forced to prick up with his *Bodkin* the corners of the *Sheet* ſo high to ſee the *Signature*: which in a long train of work ſaves time.

If it be the *Firſt Page* of the firſt *Sheet* of a *Book* the *Signature* is A, if the firſt of the ſecond *Sheet* B, if the firſt of the third C, and ſo ſucceſſively till he come to W, which is always skipt, becauſe the *Latin Alphabet* has not that *Letter* in it; but next V follows X Y Z, ſo that if the *Book* contain above three and twenty *Sheets*, the *Signature* of the four and twentieth *Sheet* muſt be A a, if five and twenty B b; till in like manner he run through the *Second Alphabet*, and comes to the third, fourth, *&c.* ſtill as he begins a new *Alphabet* adding an a.

To

To the ſecond *Page*, or any other *Even Page*, he *Sets* no *Signature*, but to the Third which is an *Odd Page* he does, viz. A 2. The *Figure* of 2 is no part of the *Signature*, but is only an adjunct to ſhew the *Book-binder* the Second *Leaf* of that *Sheet*, that he may the ſurer *Fold* the *Sheet* right.

If it be a *Folio Sheet* he cannot ſet A 3 in a ſingle *Sheet*, becauſe it has but two *Odd Pages* in it; but if they be *Quir'd Sheets*, that is, two, three, or four *Sheets Quir'd* together, he muſt ſet A 3 in a *Folio*, though not in the Firſt, but Third *Sheet* of that *Quire*. But no wiſe *Compoſiter*, except he work on *Printed Copy* that runs *Sheet* for *Sheet*, will be willing to *Compoſe* more *Sheets* to a *Quire* than he ſhall have a *Fount* of *Letter* large enough to ſet out, unleſs he will take upon him the trouble of *Counting off* his *Copy*: becauſe he cannot *Impoſe* till he has *Set* to the laſt *Page* of that *Quire*; all the other *Sheets* being *Quired* within the firſt *Sheet*, and the laſt *Page* of the *Quire* comes in the firſt *Sheet*. But when he *Compoſes Quir'd Work*, the *Signature* of the firſt *Page* is A, the *Signature* of the *Sheet Quir'd* next within the firſt *Sheet* is A 2, the firſt *Page* of the next *Quir'd-Sheet* A 3: So that the *Signatures* of all the *Sheets* in the firſt *Quire* is A, A 2, A 3, *&c.* according to the number of *Sheets Quired* together. The ſecond *Quire* begins B, B 2, B 3, *&c.* The Third *Sheet* C, *&c.* according to the number of *Quires*. This is called *Printing* in *Quires*. Now to return.

If the *Form* be *Quarto*, he *Sets* under the Fifth *Page Signature* 3. If *Octavo*, he ſets alſo under the Fifth *Page Signature* 3. and under the Seventh *Page*

Signa-

Signature 4. If *Twelves*, he ſets alſo under the Fifth *Page Signature* 3, and under the Seventh *Page Signature* 4, and under the Ninth *Page Signature* 5, and under the Eleventh *Page Signature* 6. The Rule is, that all *Odd Pages* ſhould have a *Signature*, if they ſtand on the *Out-ſide* of the *Sheet*; and the reaſon for the Rule is, that the *Gatherer*, *Collater* and *Book-binder* may the readier lay *Sheets* right, if they be turned wrong. This Rule is not among *Compoſiters* ſo well obſerved as it ought to be: For in *Quarto*'s they not only leave the *Signature* 4 out, but rarely put in *Signature* 3.

¶ 5. *Some Circumſtances a good* Compoſiter *conſiders and obſerves in* Compoſing.

A good *Compoſiter* is ambitious as well to make the meaning of his *Author* intelligent to the *Reader*, as to make his Work ſhew graceful to the Eye, and pleaſant in Reading: Therefore if his *Copy* be Written in a Language he underſtands, he reads his *Copy* with conſideration; that ſo he may get himſelf into the meaning of the *Author*, and conſequently conſiders how to order his Work the better both in the *Title Page*, and in the matter of the *Book*: As how to make his *Indenting*, *Pointing*, *Breaking*, *Italicking*, *&c.* the better ſympathize with the *Authors* Genius, and alſo with the capacity of the Reader.

Nor does a *Compoſiter* the leaſt ſhew his skill in the well ordering and humouring of a *Title Page*, which, becauſe it is the firſt *Page* of a *Book*, we ſhall begin the *Compoſiters* Conſiderations at.

He

He, as aforeſaid, judiciouſly reads his *Title Page*, and conſiders what *Word* or *Words* have the greateſt Emphaſis in it. If many *Words* precede the Emphaſis, he conſiders whether it be beſt to make one or two *Lines*, or more of them, by electing a *Body* bigger or leſs to *Set* the precedent *Matter* in, and whether any of theſe *Lines* ought to be *Indented*, either at one end or both, viz. *Set* in the middle of the *Line*. And what Words of Emphaſis come in that precedent *Matter*; that he may *Set* them either in *Capitals*, *Roman*, *Italick*, or *Engliſh*; and at laſt bring the great Emphaſis, which is generally the *Title* or *Name* of the *Book* in a *Line* by it ſelf, and juſt fill it if he can; which he has ſome helps to do, by the great *Bodied Letters* of the *Lower Caſe*, or elſe by *Capitals*, *Roman*, *Italick* or *Engliſh*, of a proper *Body*, which beſt pleaſes his fancy, or is in preſent mode.

If this *Word* of great Emphaſis be *Set* in the *Lower Caſe*, yet he *Sets* the firſt *Letter* a *Capital*, and he *Sets* no *Space* between *Letter* and *Letter*, but between *Word* and *Word* he does, if there happens more than one *Word* in that *Line*: But if that *Word* be *Set* in *Capitals*, he chuſes to *Set* a *Space* between every *Letter*, and ſometimes he *Sets* two *Spaces*, yet that is rather to drive out the *Line*.

If he *Sets* but one *Space* between the *Letters* in a *Word*, he *Sets* three *Spaces* between *Word* and *Word*: And if he *Set* two *Spaces* between *Letter* and *Letter*, he *Sets* four *Spaces* betwen *Word* and *Word*, as well to give a graceful appearance to the Eye, as to make a Viſible and proportionable diſtinction between *Word* and *Word*.

He

He alſo conſiders what *Whites* to *Set* between his *Lines*; as either a *Line* of *Quadrats*, and of what *Body*; or (if his *Title Page* be large) but a *Scaboard*: and at laſt *Juſtifies* his *Page* in *Length*, either by adding more *Whites* (where they may be proper) if his *Page* be too ſhort, or by taking out or diminiſhing *Whites* if the *Page* be too long: And this he does by altering the *Body* of *Whites*, for if a *White-line* be *Engliſh*, he may take it out, and in its room put in *Pica*, *Long-primmer* or *Brevier*, according as he finds he has *Run out*; yet this he does with Conſideration, where more or leſs *White* is propereſt.

But the mode of ordering *Titles* varies; as may be ſeen by comparing the *Title Pages* of every twenty years: Therefore a Laſting Rule cannot be given for the ordering them: only what has been ſaid in general concerning Emphaſis, and in particular to humour the Eye, the *Compoſiter* has a conſtant regard to.

When he is to Work upon a continued Series of *Matter*, he *Sets* the *Title* of the *Chapter* or *Section* in a bigger *Body* and different Character than his *Matter* is *Set* in; as if the *Matter* be *Set* in *Engliſh Roman*, he *Sets* the *Title* in *Great Primer* or *Double Pica Italick*, but the *Words* of *Emphaſis* he will *Set* in *Roman*, and varies the Character for them as well in the *Title*, as he does in the *Matter*.

If his *Title* be ſhort, he *Sets* it in the middle of the *Line*, by *Setting Quadrats* on both ſides: If his *Title* be long, he *Sets* the middle *Line* in the middle: If it make three or more *Lines*, he *Indents* the firſt with an m *Quadrat*, and the other with two

m *Qua-*

m *Quadrats*. Before his *Title* he ſets a *White-line*, viz. a *Line* of *Quadrats*, and ſo he does after it; but with regard to what the bigneſs of the *Body* of the *Letter* the *Title* is *Set* in, *Runs out*; for theſe *Whites* muſt be ſet of ſuch *Bodies* (bigger or leſs) as will make the difference of the *Body* the *Title* is *Set* in, a juſt number of *Lines* with thoſe of the *Body* the *Matter* is *Set* in, becauſe the length of the *Page*, as aforeſaid, muſt be *Juſtified*. And he always forecaſts to put rather more than leſs *White* before the *Title* than after it; becauſe the *Title* has relation to the *Matter* of the *Chapter* or *Section* it is *Set* to, and therefore ought not to be ſo diſtinct, as from the precedent *Chapter* or *Section*.

After his *Title*, he begins his *Chapter* or *Section* with a *Two-lin'd Letter*, or *Three* or *Four-lin'd Letter*, but *Indents* it not. He begins his *Chapter* or *Section* with the firſt *Line* in the *Stick*, unleſs his *Stick* be very Deep, or his *Two* or *Three-lin'd Letter* ſmall, becauſe it may elſe reach above the top of the *Stick*, and ſo hinder him from filling up *Lines* to the *Body* of the *Two* or *Three-lin'd Letter*.

After the *Two* or *Three-lin'd Letter*, he *Sets* a *Capital Letter* of the *Body* his *Matter* is of, and *Indents* all, thoſe *Lines* that are to fill up the *Great Letter* with an n *Quadrat*.

He cannot uſe his *Compoſing-Rule* (mentioned in the foregoing part of this ¶) till he have filled up *Lines* to the *Body* of the ſaid *Great Letter*; becauſe his *Compoſing-Rule* is too long to go between the *Great Letter* and the *Head* of the *Stick*: but then he uſes the end of a *Riglet* to rub along the *Lines* he has

has *Compoſed* to ſmoothen them, and ſo *Set* on till he has filled up the whole *Body* of the *Great Letter*, and moſt times ſomewhat above it; which *Letter* he afterwards *Juſtifies* with *Small Bodied Quadrats*, or with *Scaboards* or *Cards*, or with any or all of them till the *Great-letter* ſtands even with the number of *Lines* that it *Indents*, and afterwards uſes his *Compoſing Rule*, and *Sets* the ſucceeding *Lines* to their full Length.

If it be a great *Wooden Letter*, he begins his *Chapter* or *Section* with, it is moſt times too *Deep* for the height of the *Cheeks* of his *Stick*; therefore he *Juſtifies* his *Stick-full* juſt to the breadth of the *Wooden Letter* with *Quadrats* or *Quotations*, and *Sets* on between thoſe *Quadrats* or *Quotations* and the *Head* of his *Stick*, as I ſhewed before, till his *Stick* be full of *Lines*; which *Lines* he *Empties*, leaving the *Quadrats* or *Quotations* in his *Stick*, to ſerve, as before, for the ſucceeding *Stick* or *Sticks*, till he have *Compoſed Lines* enough for the *Depth* of the *Wooden Letter*.

As he *Sets* on, he conſiders how to *Point* his Work, viz. when to *Set* , where ; where : and where . where to make ( ) where [ ] ? ! and when a *Break*. But the Rules for theſe having been taught in many School-books, I need ſay nothing to them here, but refer you to them.

And as he conſiders how to *Point*, ſo he conſiders what proper Names, either of Perſons or Places, he meets with in his *Copy*, as alſo what Words of great Emphaſis, and what Words of ſmaller Emphaſis, what Obſolete Words, and what Foreign, *&c.*

When

When he meets with proper Names of Perſons or Places he *Sets* them in *Italick*, if the Series of his *Matter* be *Set* in *Roman*; or in *Roman* if the Series of his *Matter* be *Set* in *Italick*, and *Sets* the firſt *Letter* with a *Capital*, or as the Perſon or Place he finds the purpoſe of the Author to dignifie, all *Capitals*; but then, if conveniently he can, he will *Set* a *Space* between every *Letter*, and two or three before and after that Name, to make it ſhew more Graceful and Stately. For *Capitals* expreſs Dignity where-ever they are *Set*, and Space and Diſtance alſo implies ſtatelineſs.

Words of great Emphaſis are alſo *Set* in *Italick*, and ſometimes begin with a *Capital Letter*: If the Emphaſis bear hard upon the Word to be expreſt as well as the Thing to be expreſt, it ought to begin with a *Capital*. I ſhall bring for inſtance an Obſervation I made above forty years ago on the Word *that*, viz. that that Word may be reitterated five times, and make good Senſe: If it be ſet thus it will ſeem nonſenſe, that that that that that; but if it be *Set* thus, that that That that that Man would have ſtand at the beginning of the *Line* ſhould ſtand at the end; it will, by toning and laying Emphaſis on the middlemoſt That become good Senſe. Now all the thats ought to be *Set* in *Italick*, and the middlemoſt That ought to begin with a *Capital*, becauſe it is both the Thing and Word.

Words of a ſmaller Emphaſis may be *Set* in the running Character, viz. *Roman*, if it be the Series of the *Matter*; or *Italick*, if *Italick*, but begun with a *Capital*: Inſtance in the laſt Sentence, That which expreſſes both the Thing and Word, *&c.* Here Thing and Word both

both bear Emphaſis, though not very great, and therefore ought to be dignified more than thoſe Words that precede or follow thoſe Words. Yet I know ſome Authors are now ſo nice to mark both the Word Thing and the Word Word in *Italick.*

After a . though not at the end of a *Break* he begins with a *Capital.*

When in *Compoſing* he comes near a *Break*, he for ſome *Lines* before he comes to it conſiders whether that *Break* will end with ſome reaſonable *White*; If he finds it will, he is pleas'd, but if he finds he ſhall have but a little ſingle *Word* in his *Break*, he either *Sets* wide to drive a Word or two more into the *Break-line*, or elſe he *Sets* cloſe to get in that little Word, becauſe a *Line* with only a little Word in it, ſhews almoſt like a *White-line*, which unleſs it be properly plac'd, is not pleaſing to a curious Eye.

Nor do good *Compoſiters* account it good Workmanſhip to begin a *Page* with a *Break-line*, unleſs it be a very ſhort *Break*, and cannot be gotten in in the foregoing *Page*; but if it be a long *Break*, he will let it be the *Direction-line* of the fore-going *Page*, and *Set* his *Direction* at the end of it.

Indenting after a *Break* (unleſs it be the end of a *Chapter* or *Section*) is an m *Quadrat*, (more or leſs is not proper) *Set* at the beginning of the *Line*: But when Verſes are *Indented*, two, three or four m *Quadrats* are uſed, according to the number of the Feet of the Verſes, but moſt times according to the fancy of the Author.

Engliſh obſolete Words he *Sets* in the *Engliſh* Character,

racter, the firſt *Letter*, if the dignity of the Word require it, as aforeſaid, with a *Capital*.

Foreign Languages he meets with in his *Copy*, if the *Maſter Printer* have them in his Houſe, he *Sets* them in the proper Character; if not, the Author muſt write them in the common Character, and the *Compoſiter Sets* them as they are written.

That I may be the leſs unintelligent to the Reader, I will inform him that in *Printers* Dialect (as in this laſt Paragraph it is uſed) *Language* is underſtood *Letter*: For the *Compoſiter* does ſay, I ſhall uſe a Word or two of *Greek Letter*, or *Hebrew Letter*, or *Saxon Letter*, *&c.* but I ſhall uſe a word or two of *Greek*, a Word or two of *Hebrew*, *Saxon*, *&c.* ſo that the Word *Letter*, is in *Compoſiters* Dialect, underſtood by naming the Language.

If *Indentures* inſtead of *Marginal Notes* come in a number of *Lines*, he *Indents* his *Stick*, as I ſhewed you he did for a *Wooden Letter*, leaving a convenient *White* between his *Matter* and *Indenture*, and then again *Indents* his *Stick* to *Set* the *Matter* that comes in thoſe *Indentures*, allowing a reaſonable *White* between the Top and the Bottom of his *Indenture*, and then *Juſtifies* it up to an exact number of *Lines*, as he did the *Wooden Letter*.

If *Marginal Notes* come down the ſide (or ſides, If the *Page* have two Columns) he chuſes to *Set* them in on the *Stone*, rather than in his *Galley*; becauſe both his *Page* and *Notes* ſtand ſafer, being cloathed with the *Furniture*, than they do when they ſtand Naked in the *Galley*. Therefore I ſhall ſay nothing of *Marginal Notes* till I come to *Impoſing*.

Some

Some other Circumſtances (according as variety of Work does happen) a *Compoſiter* may meet with; but by what has been ſaid upon this and ſeveral other Trades, the Ingenious (as they occur) may eaſily conſider how they are to be performed.

Nor (as afore was hinted) is a *Compoſiter* bound to all theſe Circumſtances and Punctilio's, becauſe, in a ſtrict ſenſe, the Author is to diſcharge him of them in his *Copy*: Yet it is neceſſary the *Compoſiters* Judgment ſhould know where the Author has been deficient, that ſo his care may not ſuffer ſuch Work to go out of his Hands as may bring Scandal upon himſelf, and Scandal and prejudice upon the *Maſter Printer*.

¶ 6. *Of Tying up a* Page.

We may remember the *Compoſiter* has yet a *Page* in his *Galley*: This *Page* muſt be *Tyed up* with a *Packthred Cord*, courſer or finer according to the bigneſs of his *Letter* and *Page*: For *Small Letter*, which rarely is uſed to great *Pages*, he chuſes a fine *Packthred*, ſtrong and limber; but for *great Letter* and *great Pages* a ſtronger that will better endure hard pulling at: Wherefore he ſeeks a *Cord* for his purpoſe, or elſe takes ſo much off the whole *Quoil* as will ſerve his turn, and taking the end on't in his Right Hand, lays that end about an Inch within the *Direction-line*, and a little lower than the middle of the *Shank* of the *Letter*, and holds that end there cloſe with the two Fore-fingers of his Left Hand, then he ſlides his Right Hand along the *Cord*,

Cord, ſtraining it as ſtiff as he can along the right ſide of the *Page*, and turns it about the *Head* of the *Page* as cloſe down to the *Ledge* of the *Galley* as he can, and ſo ſlides his Hand over the *Cord* till he draws it about all the ſides of the *Page*: and when he comes to the firſt end of the *Cord*, he doubles up that end ſo as it ſtand above the *Face* of the *Letter*, and whips the *Cord* over that end, that the end may not ſlip; then he twiſts part of the remaining *Cord* about his Right Hand, and graſping his Left Hand Fingers about the *Direction* Corner of the *Page*, as well to hold the end of the *Cord* from ſlipping, as to keep the *Page* tight in its poſition, with his Right Hand he pulls the *Cord* as hard down the ſide of the *Page* as he can; and keeping the *Cord* ſtraining, whips it again about the *Head* and other ſides of the *Page*, and ſo again about all the ſides of the *Page*, keeping it ſtill ſtraining; and always as he comes to the Right Hand ſide of the *Page*, pulling hard, and taking care that it ſlip not: Having whipt the *Cord* twice about the *Page*, he holding two of his Left Hand Fingers againſt the *Direction*-corner upon the *Cord*, that it ſlip not, with the Ball of his Thumb of his Right Hand, and the Balls of his Fingers to aſſiſt, thruſts againſt the oppoſite diagonal corner of the *Page*, and removes it a little from the *Ledges* of the *Galley*, that he may with the Nail of the Thumb of his Right Hand have room to thruſt the *Cord* whipt about the *Page*, lower down upon the *Shank* of the *Letter*, (to make room for ſucceeding whippings of the Cord, and then thruſts or draws the *Page* cloſe

cloſe to the *Ledges* of the *Galley* again; then whips the *Cord* again about the *Page* (as before) till he has whipt it four or five times about the *Page*, taking care that the ſeveral whippings lye parallel to each other, not lapping over any of the former whippings.

Having whipt the *Cord* four or five times about the *Page*, he with his *Bodkin* or the corner of a *Braſs Rule* (which lies beſt at hand) faſtens the *Cord*, by thruſting a nooſe of it between the ſeveral whippings and the Right Hand ſide of the *Page*, cloſe up to the *Direction-line*, then draws the lower part of that Nooſe cloſe up to the very corner of the *Direction-line*, that it may be the better faſtned between the *Page* and the Whippings: Then, if his *Cord* be not of a juſt length, he cuts it off from the reſt of the Quoil, leaving ſo much length to it as that the end of it may ſtand upright an Inch or two above the *Face* of the *Letter*; the reaſon will ſhew it ſelf when we come to *Impoſing*. Then he removes the *Page* pretty far from the *Ledges* of the *Galley*, to ſee if the Whippings lye about the middle of the *Shank* of the *Letter*; if they lye too high, as moſt commonly they do, he thruſts them lower with the Nail or Nails of his Thumbs. Then (if the *Page* be not too broad) he places his Fore or Middle Finger, or both, of his Right Hand on the Right Hand Side of the *Page*, and his Thumb on the Left; and bowing his other Finger or Fingers under the *Head* of the *Page*, he rears up the *Handle-end* of his *Galley* with his Left Hand almoſt upright, and ſo diſcharges the *Galley* of the *Page*, by delivering it upright into his Right Hand. Having his *Page* upright

upright in his Right Hand, at the *Head*, he claps the Fingers of his *Left Hand* about the *Foot* of the *Page*, upon the ends of the *Lines* on the Right Hand Side of the *Page*, and his Thumb on the Left Hand ſide of the *Page*, with the Palm of his Hands towards the *Face* of the *Letter*, and ſuch Fingers as he can ſpare bowed under the Foot of the *Page*, turning the *Page* with the *Face* of the *Letter* from him, and letting it reſt upon the inſide of his Fingers, under the Right Hand Side of the *Page*, and ſo goes with it to the *Correcting-ſtone*.

But if the *Correcting-ſtone* be full of *Forms* or other *Letter*, as many times it is, then before he begins to *Tye* up his *Page* he provides a *Sheet* of *Waſte Paper*, ſuppoſing it a *Quarto Page*, and doubles that Sheet in four, and while he has the *Page* upright in that Hand (as aforeſaid) he takes that doubled Sheet into the Palm of his *Left Hand*, and claps it againſt the bottom of the *Page*, and turning his Left Hand outward, receives the *Page* flat upon the Paper on the Palm of his Hand: Then with his Right Hand graſps the Sides of the *Page* and the Sides of the Paper, which turn up again above the bottom of the *Page*, and ſets it on a *Letter Board*, or ſome other board in a convenient place under his *Caſe*. He places that *Page* on the Left Hand the Board with the Foot of the *Page* towards him, that the other *Pages* that are in like manner ſet on the Board afterwards, may ſtand by it in an orderly ſucceſſion againſt he comes to *Impoſe* them.

If it be a large *Folio Page*, or a *Broad-ſide* he has *Tyed up*, he cannot take that into his Hands, becauſe

cauſe it is too broad for his Graſp; therefore he carries his *Galley*, *Page* and all to the *Correcting-ſtone*, and turns the Handle of the *Galley* towards him, and taking hold of the Handle with his Right Hand, he places his Thumb and Ball of his Thumb on his Left Hand, againſt the inſide the *Head-ledge* of the *Galley*, to hold it and keep it ſteady, and by the *Handle* draws the *Slice* with the *Page* upon it, out of the *Galley*, letting the *Slice* reſt upon the *Correcting-ſtone*: Then he thruſts the *Head-end* of the *Slice* ſo far upon the *Correcting-ſtone*, that the *Foot* of the *Page* may ſtand an Inch or two within the outer edge of the *Correcting-ſtone*; and placing his Left Hand againſt the *Foot* of the *Page*, in the ſame poſture he laſt plac'd it againſt the *Head-ledge* of the *Galley*, he draws the *Slice* from under the bottom of the *Page*, and leaves it upon the *Correcting-ſtone*. *See Plate* 25. *at* A.

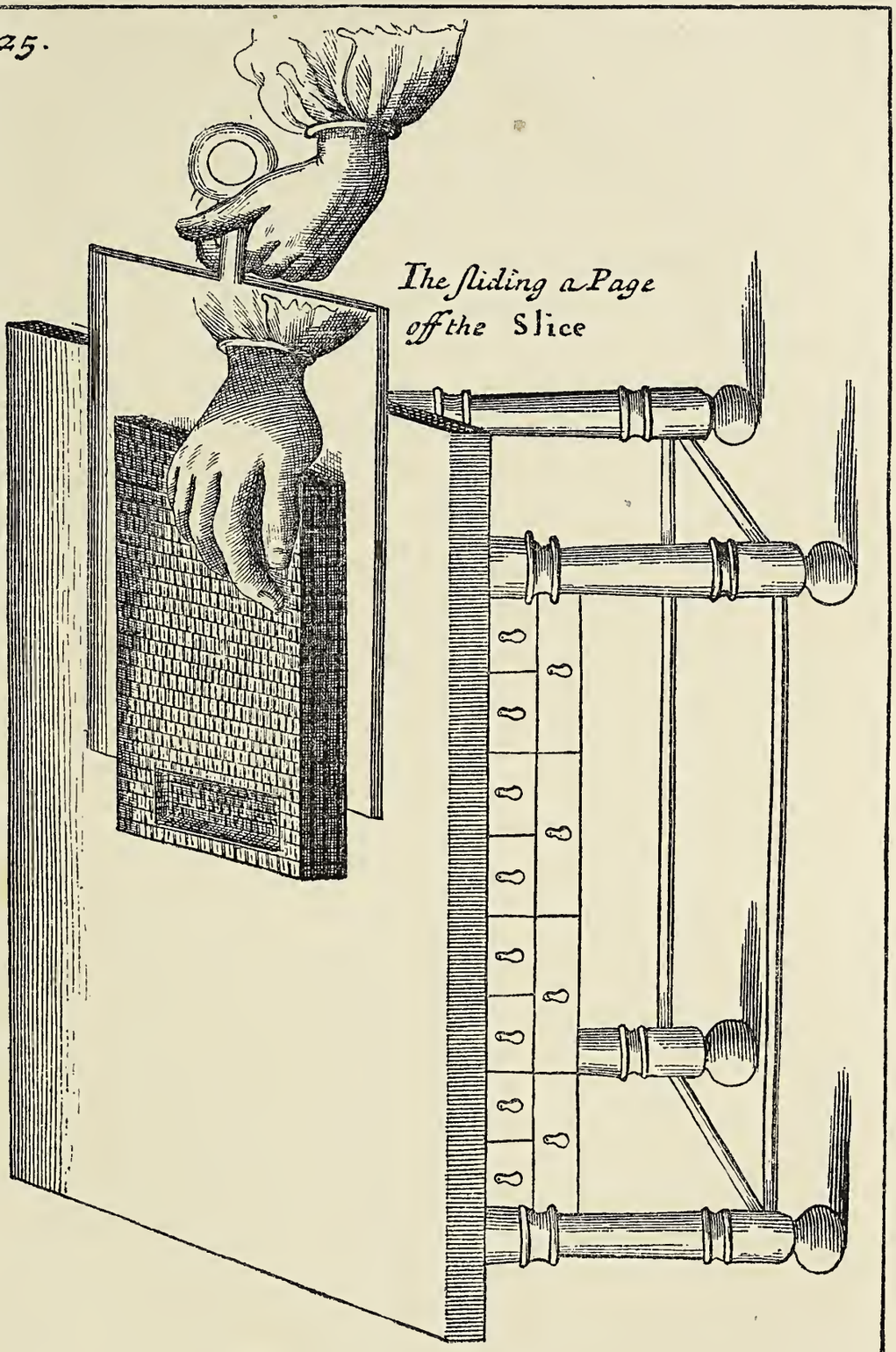
¶ 7. *Of* Impoſing.

Impoſing is the placing of the *Pages* that belong to a *Sheet*, with the *Chaſe* and *Furniture* about them, in ſuch an order as when the *Sheet* is wrought off at the *Preſs*, all the *Pages* may be Folded into an orderly ſucceſſion.

There are four *Volumns* in uſe that are differently *Impoſed*, viz. *Folio*, *Quarto*, *Octavo* and *Twelves*.

The manner of *Impoſing* theſe *Sheets* will be plainer repreſented in a Table than by many words; therefore in *Plates* 26, 27, 28. I have given you Drafts of each *Volumn*, both *Firſt* and *Second Form*, viz. *White Paper* and *Reteration*; as you may ſee noted over each *Form* in the Plates. For Example, the two *Forms* in the *Folio Sheet*: In the *Firſt Form* you

Plate 25.



you may ſee 1 on the Left Hand and 4 on the Right, which ſhews that the *Firſt Page* muſt ſtand on the *Correcting-ſtone* on that Hand, and the *Fourth* on the Right Hand, with the *Foots* of the *Pages* towards you; and ſo for all the other *Forms*. The number of the *Page* belonging to each *Sheet* is marked in what place it is to ſtand on the *Stone* in the *Chaſe*, and the Figures of thoſe Numbers are placed with their *Head* and *Foot* upwards and downwards, as the *Heads* and *Foots* of the *Pages* muſt ſtand in the *Chaſe*.

The places of theſe *Pages* for all *Volumns* the *Compoſiter* has always in his memory, yet has he a help if he remember the places of but the firſt half of the number of *Pages* of each *Volumn*: For if he knows the place of the firſt *Page*, the *Page* that ſtands next it muſt be that number which makes one more than the number of all the *Pages* in the *Sheet*. For Example, in the *Folio*; next the *Firſt Page* ſtands the *Fourth Page*, 1 and 4 added makes 5, viz. one more than the number of *Pages* in the whole *Sheet*. *See Plate* 26. Again, In the *Twelves Volumn* next the *Firſt Page* ſtands the *Twenty Fourth*, 1 and 24 added makes 25: Next 2 ſtands 23, which added makes 25, *viz.* one more than the number of *Pages* in the whole *Sheet*. This is a help, and a certain Rule for placing the *Pages* of any Volumn, if he knows but by memory the places of the firſt half number. *See Plate* 27. Thus you will find an *Even* and an *Odd Page* ſtand together.

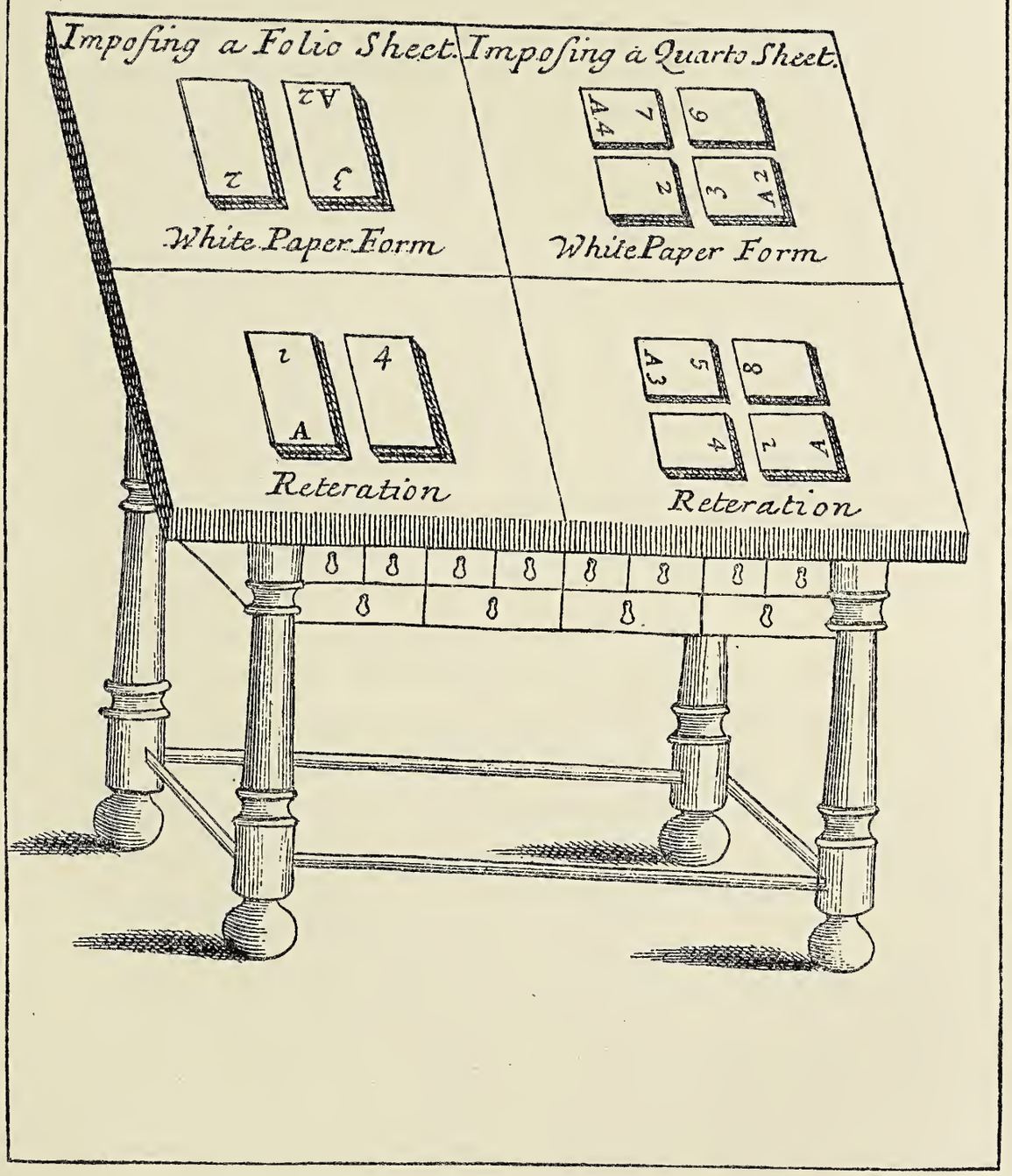
The other *Volumns*, viz. *Sixteens*, *Twenty-fours*, *Thirty-two's*, are but the *Octavo's* and *Twelves* doubled, or twice doubled and *Impoſed* in *Half-Sheets*. For Example, The *Sixteens* is two *Octavo's Impoſed* on

on each ſide the *Short Croſs*; the *Twenty-fours* is two *Twelves Impoſed* on each ſide the *Long Croſs*, and a *Thirty-two's* is four *Octavo's Impoſed* in each *Quarter* of the *Chaſe*. And thus they double a Volumn as oft as they think fit. But as was ſaid before, they are *Impoſed* on each ſide the *Croſs*, or in each *Quarter* of the *Chaſe*, as the Volumn that is doubled or re-doubled is *Impoſed* in the whole *Chaſe*.

In *Half-ſheets*, all the *Pages* belonging to the *White Paper* and *Reteration* are *Impoſed* in one *Chaſe*, and are plac'd, as you ſee by the Drafts (in *Plate* 28.) of *Half-ſheet Forms*. So that when a *Sheet* of *Paper* is Printed on both ſides with the ſame *Form*, that *Sheet* cut in two in the *Short Croſs*, if *Quarto* or *Octavo*, and in the *Short* and *Long Croſs*, if *Twelves*, and folded as *Octavo* or *Twelves*; the *Pages* (I ſay) of each *Half-ſheet* ſhall follow in an orderly ſucceſſion.

Having premiſed thus much, he takes up the *Pages* he ſet by on Papers in an orderly ſucceſſion when he *Tyed* them up, graſping the edges of the Papers that ſtick up on both ſides the *Page* tight, that ſo the bottom of the Paper may ſtand the ſtronger againſt the bottom of the *Letter*, to keep it from falling out; and bringing it thus to the *Correcting-ſtone*, he gets the two laſt Fingers of his Right Hand under the *Head* of the *Page*, but not under the Paper ſticking up about the *Head* of the *Page*, keeping his other two Fingers and Thumb on the ſides of the *Page*, and ſlips or ſlides his Left Hand, ſo as the Palm of it may turn towards the bottom of the *Page*; and rearing the *Page* up on end

Plate 26.


Imposing a Folio Sheet.
Imposing a Quarto Sheet.
White Paper Form
White Paper Form
Reteration
Reteration

end on his Right Hand, he diſcharges his Left to take away the Paper behind the *Page*; then he graſps his Left Hand about the *Foot-end* of the *Page* in the ſame poſture that his Right Hand graſps the *Head-end*. And having the *Page* thus between his Hands with the bottom of the *Letter* towards him, he directs both his Hands to the place on the *Stone* where the *Page* muſt ſtand, and claps it down on the *Stone* ſo nimbly, that the whole bottom of the *Page* comes all at once to the Face of the *Stone*, leſt otherwiſe he endanger the *Breaking*, *Squabbling*, or *Hanging*, *&c.* of the *Page*. And thus he ſets down all the *Pages* of the *Form*: which having plac'd in order and rank, as before I have ſhew'd in the Drafts of each reſpective Volumn, he lays the *Chaſe* about them; and (if he have not a *Form* already *Dreſt*) ſeeks out *Inner Side* and *Head-ſticks* of ſuch a thickneſs, as with the *Croſs* may make a *Margin* between the adjoyning *Pages* convenient to the Volumn and ſize of the Paper.

If his *Side* or *Head-ſticks* be a little too thin, and and he cannot find any to his intended thickneſs, he puts a *Scaboard* or two between the *Head* or *Side-ſtick* and the *Croſs*, as well to have more *Margin* as to commode the *Preſs-man* (if occaſion be) when he makes *Regiſter*, as I ſhall further ſhew when I come to the Section of the *Preſs-man*.

Then he ſeeks outer *Side* and *Foot-ſticks*, his *Side-ſticks* of the exact length of the *Page*, or a *Scaboard* ſhorter, or he cuts them to that length, that the *Foot-ſtick* Bear not againſt the end of the *Side-ſtick*, becauſe then the *Letter* will not *Riſe*; for the

Foot-

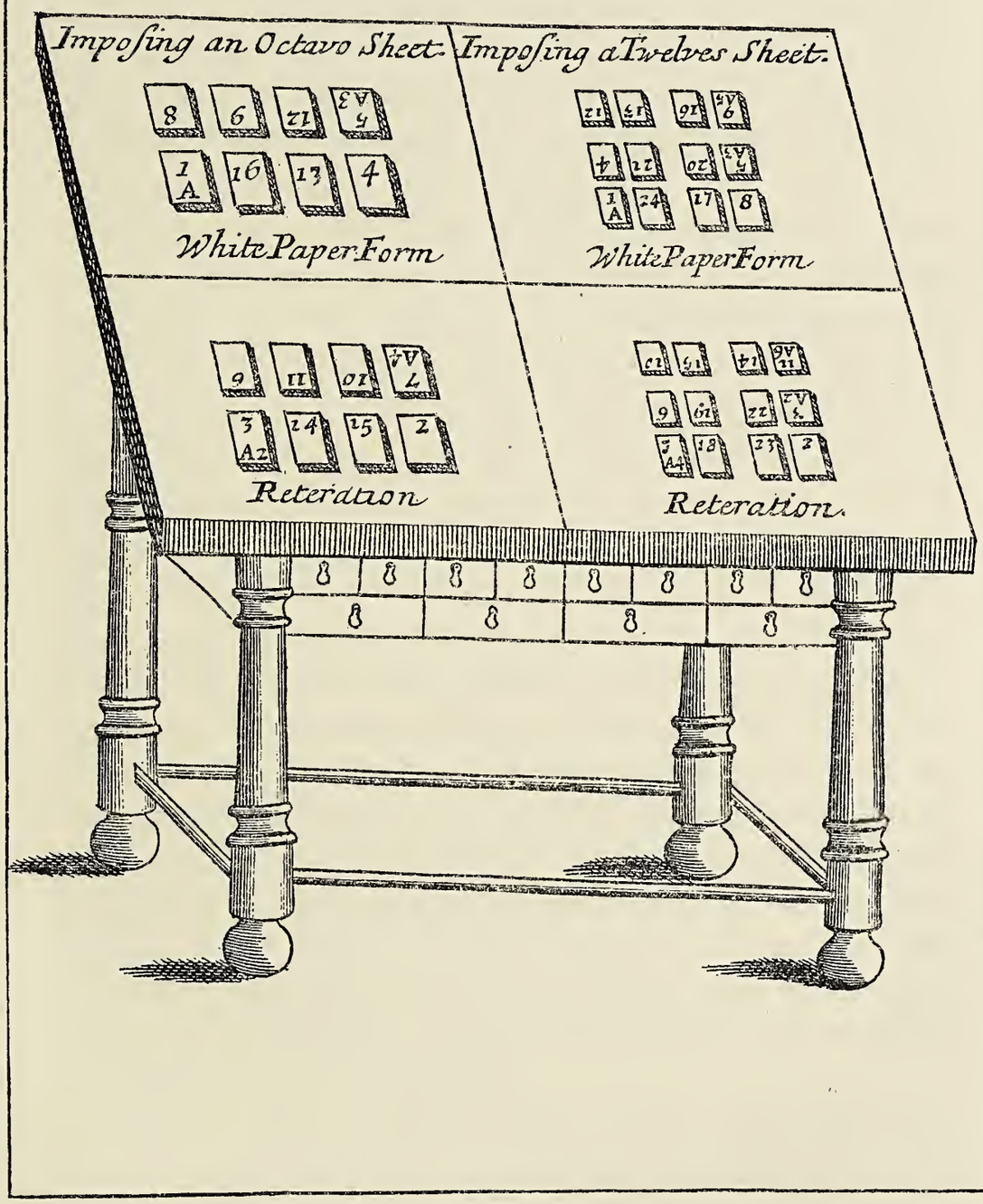
Foot-ſtick muſt be a little longer than the breadth of the *Page*, that it may ſhoot beyond the end of the *Side-ſtick*.

Then he fits the *Chaſe* and *Furniture* at *Side* and *Foot*, with *Fore* and *Hind Quoins*, and takes off the *Cords* from the *Pages*, as ſhall be ſhew'd by and by.

But if *Marginal Notes* come down the Side or or Sides of the *Pages* (for if there be two *Columns* in a *Page*, the *Marginal Notes* may come down both ſides) then, before he fits his *Foot-ſticks* he ſets a *Scaboard* the length of the *Page*, againſt the ſide of the *Page* the *Notes* come on, and a row of *Quotations* almoſt down the length of the *Page*, or ſometimes but one or two in a place at convenient diſtances, to keep the *Letter* of the Side of the *Page* upright, according as he finds his particular *Notes* ſtand near or far aſunder, and afterwards fits his *Foot-ſtick*. Then he *Sets* his *Notes*, commonly between the *Cheeks* of his *Stick*, which for that purpoſe are fitted to the *Meaſure* of the *Quotation*: And having *Set* them, he places them in the proper places where they muſt come in, and with *Quotation Quadrats* of proper *Bodies*, *Juſtifies* them up, feeling (at laſt) carefully and cautiouſly at the *Foot*, that they be neither too ſoft nor too hard *Juſtified* to the length of the *Page*.

Now if he have a *Chaſe*, or *Form*, or *Furniture* already *Dreſt* (theſe ſeveral phraſes are uſed, though they all ſignifie the ſame thing.) If he have (I ſay) a *Form Dreſt*, that is, if he or other Workmen have been Working on the ſame *Work*, i. e. *Book*, before he uſes one of the *Wrought-off Forms*, and having it on

Plate. 27


Imposing an Octavo Sheet.
8 6 12 5 A3
1 A 16 13 4
White Paper Form
Imposing a Twelves Sheet.
12 15 16 9 A5
4 22 20 5 A3
1 A 24 17 8
White Paper Form
9 11 10 7 A4
3 A2 14 15 2
Reteration
13 19 14 11 A6
9 21 22 5 A2
3 A4 18 23 2
Reteration

on a *Letter-board*, *Rinc'd*, as was ſhew'd in ¶ 2. of this Section, he places it on a Bench or Joint-ſtool, on that Hand that ſtands moſt commodious with that end of the *Stone* he *Impoſes* on, and ſo as there may be a correſponding poſition, with the *Form Wrought off* and that *Impoſing*, viz. that the *Firſt Page* (and conſequently all the reſt) of the *Wrought off Form* ſtands on the ſame Hand with the *Firſt Page* of that *Form* that is *Impoſing*.

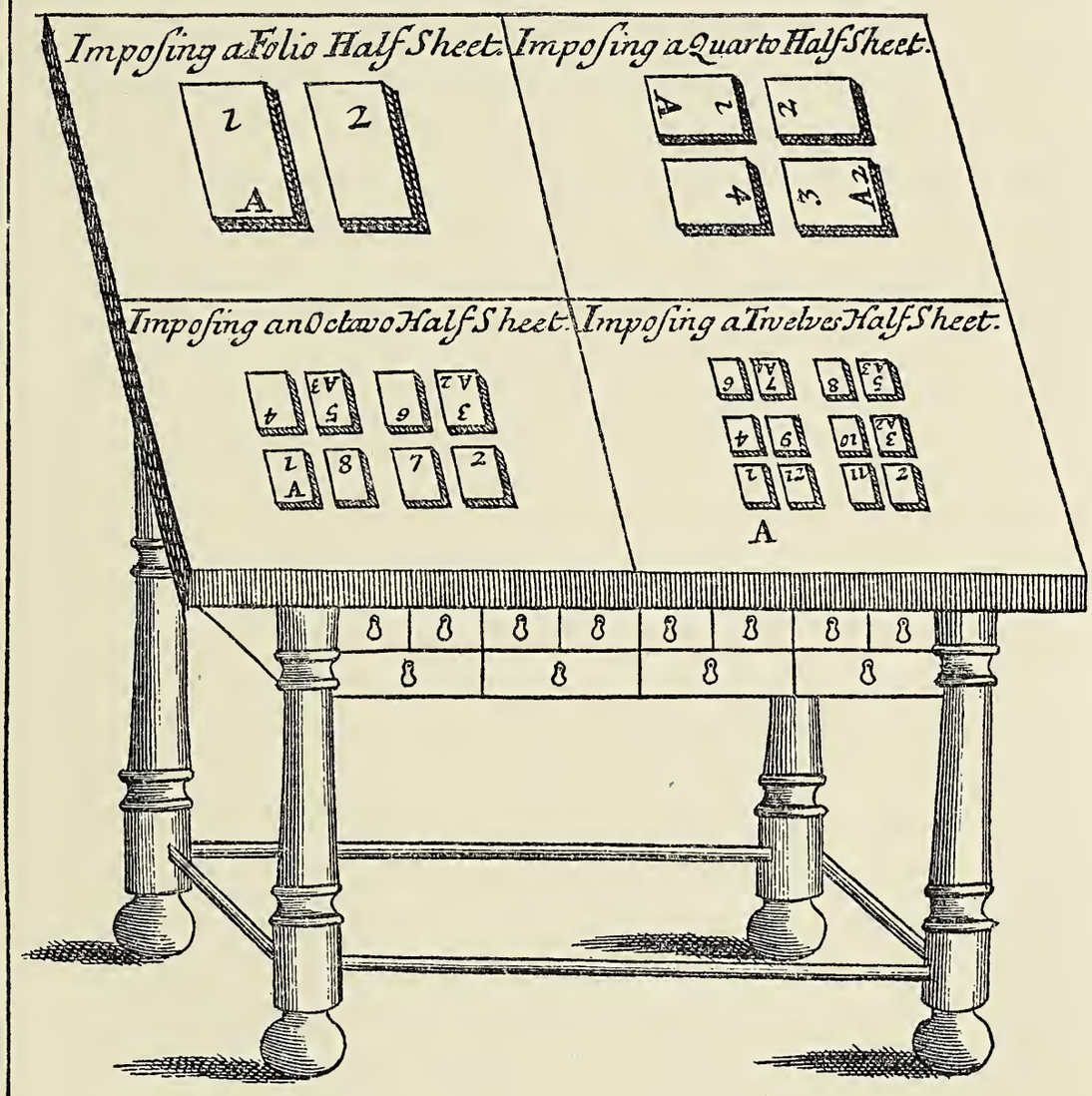
Then taking out and laying the *Quoins* in their proper places, as I ſhew'd when he *Stript* the *Form*, at the latter end of ¶ 2. he a little wriggles the *Chaſe* from one Side to the other, and forward and backwards to Looſen it, and the *Croſs* or *Croſſes* from the cloſe pinching of the *Letter* and *Furniture*: then takes it off the *Chaſe*, and lays it about thoſe *Pages* he is *Impoſing*: Then with his two fore-fingers and Thumbs he takes away the *Inner Side-ſtick* and the *Head-ſtick* at once, and at once removes them to the reſponding *Quarter* of the *Form Impoſing*, into the reſponding places from whence he took them in the *Wrought off Form*. And as he does by the *Inner Side-ſticks*, ſo he does by the outer *Side-ſticks*, and by the *Quoins*; placing them in their reſpective proper places between the *Furniture* and *Chaſe*, or ſo many of the foremoſt *Quoins*, as will go in before the *Cords* are unwhipt from the *Pages*. Thus the *Wrought off Form* is *Stript* and *Naked*; and ſtands by to *Deſtribute*.

Having thus tranſlated the whole *Furniture* of the *Wrought off Form* to the *Form Impoſing*, he finds the end of the *Cord* that he left ſticking up above the

Face

Face of the *Letter* (which perhaps by this time is got between the *Furniture* and the *Page*) and laying the Ball of his left Thumb, on the *Face* of the *Letter* at the *Direction* corner of the *Page*, to keep it from *Riſing*, he takes the aforeſaid end of the *Cord*, between the Fore-finger and Thumb of his Right Hand, and pulls gently to looſen the Nooſe that faſtned the *Cord* when he *Tyed* up the *Page*, till he draws the Nooſe out, and after it ſucceſſively all the ſeveral Whippings; which done, he places the Balls of his Thumbs, one againſt the middle of the *Side-ſtick*, and the other againſt the middle of the *Foot-ſtick*, and at once thruſts the *Page* cloſe againſt the *Inner-Side* and *Head-ſtick*, and ſo makes room to get in all the *Quoins*. But if there be more than one *Page* in a *Quarter*, as in *Octavo's* and *Twelves*, then he unties all the *Pages* of that *Quarter*, beginning with the *Inner Pages* firſt, before he can put in the *Quoins*. Then again, thruſting hard with his Thumbs, againſt the outer Sides of the *Side* and *Foot-ſticks* of the ſeveral *Quarters*, to thruſt the *Letter* up tight and Square, he looks over the *Form* as nicely as he can, to ſee what *Letter* or *Letters* may *Riſe* in the *Form*, (that is, ſtand higher than the reſt) and with the Balls of his Fingers of both his Hands, (the *Quoins* being cloſe and hard thruſt up) pats upon the *Face* of the *Letter* to beat them down: But this is not enough to ſmoothen the *Form*, but only to ſmoothen it ſo as the edges of the *Dreſſing-block* (when it comes to ſmoothen it quite) may not job againſt them. Then he takes the *Dreſſing-block*, deſcribed Section 9. ¶ 3. in his left Hand, and lays the

Plate 28.


Impoſing a Folio Half Sheet.
Impoſing a Quarto Half Sheet.
Impoſing an Octavo Half Sheet.
Impoſing a Twelves Half Sheet.
A

the ſmooth ſide of it upon the *Face* of the *Letter*, at the bottom of the *Quarter* next him; or he takes the *Shooting ſtick*, or ſometimes the lower part of the clutched Fiſt of his right Hand, and knocks either with the Head of the *Shooting-ſtick* (or his Fiſt, as aforeſaid) gently upon the upper Side of the *Dreſſing-block*, with quick knocks, removing the *Dreſſing-block* in a lineal rank upwards, and knocking ſtill quick upon it, as it goes along and comes down again with the *Dreſſing-block*, in another lineal rank parallel to the firſt: Then in the ſame order goes up again and down again, till he have run over the whole *Form*, ſtill knocking with quick knocks upon the *Dreſſing-block*, that ſo he may be ſure to preſs down every *Riſing Letter* in the whole *Form*, if he ſee any *Spaces* or *Quadrats* ſtick up, he thruſts them down with his *Bodkin*.

Then to *Lock* up the *Form*, he takes the *Shooting-ſtick* in his Left Hand and the *Mallet* in his Right, and placing the *Foot* of the *Shooting-ſtick* againſt the ſmall *Quoin* between the *Side ſtick* and the *Chaſe*, drives that a little gently up, and then removes the *Shooting-ſtick* to the next *Quoin*, and ſo to the third *Quoin* (if there be ſo many) between the *Side-ſtick* and the *Chaſe*; Then removes his knocking to the thick end of the *Foot-ſtick*, and afterwards knocks the *Foot Quoins* gently up: Then knocks pretty ſtrongly with the *Shooting-ſtick* againſt the thick end of the *Side ſtick*, and *Drives* the *Quoins* yet harder up: Then to the thick end of the *Foot ſtick*, and and *Drives* thoſe *Quoins* alſo harder up. Then at laſt knocking again, againſt the thick ends of the *Side*

and

and *Foot-ſticks*, he knocks up the *Quoins* ſo hard, as that he thinks the *Form* may *Riſe*: To try if it will, he draws the hither Side of the long Side of the *Chaſe*, about an Inch or two over the edge of the *Stone*; and putting his two hands under the *Chaſe*, Dances the *Form* three or four times ſo as it may juſt *Riſe* off the *Face* of the *Stone*: but not ſo high as that any looſe *Letters* or *Spaces* may drop out, if there be any in; but only ſo high as he may ſee if there be any in or no. If he finds there are many in that do not *Riſe* with the *Form*, he ſays the *Form Dances*, wherefore he looks carefully upon his *Pages* of *Letter*, to find out the Cauſe: For generally, either the *Letter Hangs* or the *Lines*, are ill *Juſtified*: or elſe it is not *Hard* enough *Lockt up*.

If he finds by his Eye the *Letter Hangs*: he muſt *Un-lock* and *Looſen* the *Form*, or that *Quarter* that *Hangs* pretty *Looſe*, that the *Letter* may be ſet to Right; which he does with patting upon the *Face* of the *Letter* where it *Hangs*, with the *Balls* of the *Fingers* of both his *Hands*, to twiſt or turn them into a Square Poſition.

If it be only a *Single Letter* or two that drops, he thruſts the end of his *Bodkin* between every *Letter* of that Word, till he comes to a *Space*: and then perhaps by forcing thoſe *Letters* cloſer, he may have room to put in another *Space* or a *Thin Space*; which if he cannot do, and he finds the *Space* ſtand *Looſe* in the *Form*; he with the *Point* of his *Bodkin* picks the *Space* up and bows it a little; which bowing makes the *Letters* on each ſide the *Space* keep their parallel diſtance; For by its Spring it thruſts the

Letters

Letters that were cloſed with the end of the *Bodkin* to their adjunct *Letters*, that needed no cloſing. Or ſometimes he chews a ſmall bit of *Paper*, and with the *Point* of his *Bodkin* forces that in on one ſide of the *Space*: and ſo fills up the Vacancy between the *Space* and the *Letter*. But both theſe ways are meer preſent Helps, and (in plain terms) accounted Botches, as being an Argument that his *Lines* were not well *Juſtified* in his *Stick*.

If he finds the *Form* or any part of it, was not hard enough *Lockt* up, he *Locks* all, or part harder up, as was ſhew'd before.

But now his *Form Riſes*; Wherefore he draws the Long *Side* of the *Chaſe* (as before) a little over the edge of the *Correcting-Stone*, and putting two or three of his Fingers into the Vacancy between the *Quoins*, or elſe into the Vacancy at the ends of the *Chaſe*; he rears the *Form* upon the farther *Side* of the *Chaſe*, and removing his right Hand to the Short end of the *Chaſe*, graſps it near the upper corner, and then diſcharges his left Hand alſo; and removes it to the diagonal corner of the *Chaſe*; and ſo ſlides the long *Side* of the *Chaſe* off the hither Edge of the *Correcting-Stone*: Then ſlipping his Hands to the bottom of the *Chaſe*, about two or three Inches within the corners, with the inſides of his Hands towards the *Face* of the *Letter*, and leaning the upper *Side* of the *Chaſe* againſt the upper part of his Breaſt, and clutching the Brawn of the inſide of the upper Joynt of his Arm over the upper corners of the *Chaſe*, he carries the *Form* ſo before him to the *Preſs*, and lays it upon the *Stone*, for the *Preſs-man* to make a *Proof* of

of. The *Proof* being made, the *Preſs-man* brings the *Proof*, and layes it on the *Compoſiters Caſe*: and he brings the *Form* again and layes it on the *Correcting-Stone*, and rubs it over with the *Ly-Bruſh*, as ſhall be ſhew'd in proper place. And the *Compoſiter* gives the *Correcter* the *Proof* and his *Copy* to *Correct* it by: which being *Corrected*, the *Correcter* gives it again to the *Compoſiter* to *Correct* the *Form* by.

¶ 8. *Of* Correcting.

If there be but few *Faults*, and thoſe eaſie ones, the *Compoſiter Gathers* the *Corrections* in his *Stick*, beginning at the bottom of every *Page*, and ſo aſcending upwards: Becauſe when he is *Correcting*, the *Corrections* of the top of the *Page* ſtand then firſt in the *Stick*, and therefore are readieſt to his Hand. But if there be many *Faults* he brings the *Lower-Caſe* to the *Correcting Stone*, and takes his *Corrections* as he uſes them.

Then with the *Mallet* and *Shooting-ſtick* he *Unlocks* the *Form*, as was ſhew'd in ¶ 3 of this Section. But keeps the *Quoins* pretty tight up, to ſecure the *Letter* from *Squabbling* or *Hanging*.

Then he Folds his *Proof* ſo oft double, till all the *Pages*, except that he intends to *Correct* firſt are Folded out of Sight, and he alſo Folds down the Left Hand *Margin* of that *Page* under the *Proof*, and then lays that Folded Side of the *Page* along, and cloſe to the ſame *Page* in the *Mettle*: So that the *Head-line* in the *Proof* lye in the ſame range with the *Head-line* on the *Mettle*, and the *Foot-line* even with

with the *Foot-line* on the *Mettal*, and conſequently all the *Lines* of that *Page* both on the *Proof* and *Mettal* agree, and ſtand in a mutual range.

Now therefore he looks in the *Proof*, to ſee where the *Corrector* has markt a *Fault*, and having found it in the *Proof*, he runs along that *Line* with his Eye to the ſame *Line* on the *Mettle*, which he eaſily does, becauſe the *Line* of *Mettle* ſtands in the ſame range with that in the *Proof*, and finding the *Fault* in the *Mettle* alſo, he having now his *Bodkin* in his right Hand, with the *Blade* of it between his Fore-finger and Thumb, within half an Inch or three quarters of the *Point*, and the middle of the *Bodkin* within his clutched Hand to guide and command it, he ſticks the *Point* of his *Bodkin* into the *Neck* of the *Letter*, viz. between the *Beard* and the *Face*, and lifts it with the *Point* of the *Bodkin* ſo high up above the *Face* of the other *Letters*, that he can lay hold of it with the Fore-finger and Thumb of his left Hand to take it quite out.

I muſt a little digreſs, to paraphraſe on the poſture he holds the *Bodkin* in: For in the ſticking his *Bodkin* into the *Letter*, he holds the *Blade* of it, ſo that it may make as ſmall an angle with the *Face* of the *Letter* in the *Form* as he can, viz. as flat towards the *Face* of the *Letter* as he can, without touching the *Face* of any of the adjacent *Letters* with the *Blade* of the *Bodkin*; For if he touches the *Face* though lightly, yet it may more or leſs *Batter* and ſpoil the *Face* of thoſe *Letters* it touches, and ſo he creates himſelf a freſh trouble to mend them.

The reaſon why he holds the *Blade* of the *Bodkin*

as

as flat to the *Form* as he can, is, Becauſe a ſmall Horizontaliſh entrance of the *Point* of the *Bodkin* into the *Neck* of the *Letter*, will raiſe the *Letter* up above the *Face* of the *Form*, the *Blade* of the *Bodkin* being faſtned in the little Hole it makes in the *Neck* of the *Letter*: But if he ſhould ſtick the *Point* of the *Bodkin* ſtraight or ſtraightiſh down upon any part of the *Letter*, it would indeed make an Hole, but not faſten in the *Mettle*, to draw it up; for the weight of the *Letter* would make it ſlip off the round and ſmooth *Point* of the *Bodkin*. Beſides the preſſing the *Point* of the *Bodkin* with his right Hand againſt the ſide of the next *Letter* on his left Hand, keeps the *Point* of the *Bodkin* faſt in the little Hole it makes in the *Neck* of the *Letter*, and therefore though the *Bodkin* have but a little entrance, yet it has hold enough to draw it up by. Now to return.

Having taken the Fault out, he puts the *Letter* that the *Corrector* markt in the *Margin* of the *Proof* in the room of it. Suppoſe an o were markt and n daſht out, therefore when he has taken the n out he puts an o in the room: Theſe two *Letters* being of equal thickneſs, gives him no trouble to *Juſtifie* the *Line* again after the Fault is *Corrected*; but if they had been of unequal thickneſſes, as ſuppoſe an m to come out, and an n to be put in; in this caſe he puts in a *Space* between two words (where he finds moſt convenient) to *Juſtifie* the *Line* again: Or ſuppoſe an n to come out, and an m to be put in; now he muſt take out a *Space* where he finds moſt convenient to make room for the m, as being thicker by a *Space* than an n. Thus as he *Corrects* he

he ſtill has a care to keep his *Lines* true *Juſtified*; which he tries by preſſing the Balls of his two middle Fingers pretty hard againſt the ends of three *Lines*, to make them riſe a little above the *Face* of the *Form*, whereof the *Line* he examines is the middlemoſt; for if that *Line* is not hard enough *Juſtified*, he will between the Balls of his Fingers find it hollow, or it will not *Riſe* with the other two: And if it be too hard *Juſtified*, he will find the Balls of his Fingers *Bear* only or hardeſt againſt that *Line*, and the *Line* on each ſide it will not *Riſe*.

If there be a long *word* or more left out, he cannot expect to *Get* that in into that *Line*, wherefore he muſt now *Over-run*; that is, he muſt put ſo much of the fore-part of the *Line* into the *Line* above it, or ſo much of the hinder part of the *Line* into the next *Line* under it, as will make room for what is *Left out*: Therefore he conſiders how *Wide* he has *Set*, that ſo by *Over-runing* the fewer *Lines* backwards or forwards, or both, (as he finds his help) he may take out ſo many *Spaces*, or other *Whites* as will amount to the *Thickneſs* of what he has *Left out*: Thus if he have *Set wide*, he may perhaps *Get* a ſmall *Word* or a *Syllable* into the foregoing *Line*; and perhaps another ſmall *Word* or *Syllable* in the following *Line*, which if his *Leaving out* is not much, may *Get* it in: But if he *Left out* much, he muſt *Over-run* many *Lines*, either backwards or forwards, or both, till he come to a *Break*: And if when he comes at a *Break* it be not *Gotten in*; he *Drives* out a *Line*. In this caſe if he cannot *Get in* a *Line*, by *Getting in* the *Words* of that *Break* (as I juſt now ſhew'd you how

how he *Gets-in* what was left out in the *Proof*) or by making leſs *White* to the *Title* of a *Section* or *Chapter* (if any happen in that *Page*) he muſt *Over-run* the next *Page* backwards or forwards, till that *Line Comes in*: Thus ſometimes he *Over-runs* all the ſucceeding *Pages* of the *Sheet*, and at laſt perhaps *Drives* out a *Line* to *Come in* in the next *Sheet*.

If he have *Set* a word or ſmall ſentence twice, he muſt take that out, and *Drive-out* his *Matter*. If he be near a *Break*, and the *White* of that *Break* not very long, he may perhaps *Drive it Out* at the *Break* by putting in part of the next *Line* to fill up almoſt ſo much as he took out; but not quite ſo much, unleſs his *Matter* was at firſt ſo *Wide Set* that he can *Space* out no more, or unleſs the *Break-line* he comes to have ſo much *White* in it that he fears *Getting-in* that *Line*: If either of theſe inconveniences happen, he *Drives-out* as much as he can backwards in the *Matter*; that is, he takes out ſo much as he thinks he cannot *Drive-out* when he is at the *Break*: He takes it out at the beginning of the *Line*, and puts it in at the latter end of the *Line* before it: But firſt he takes out almoſt ſo much of the beginning of his Second upper *Line*, to make room for it: I ſay almoſt ſo much, becauſe he intends to *Space-out* the reſt if it were not too *Wide Set* at firſt. And thus he runs on from *Line* to *Line*, ſtill taking out leſs and leſs at the beginning of every former *Line*, and putting it into the *Line* above that, that he may *Space-out* his *Matter* as he *Over-runs*, till his *Double-Setting* is *Driven-out*.

But if he have *Set* a *Line* or *Lines* twice, and cannot

cannot *Drive* it or them *Out* at a *Break* or *Breaks*; or that he cannot *Set* more *Whites* at the beginning of a *Section* or *Chapter*, he muſt *Over-run* the next *Page* or more, or the whole *Sheet* till it be *Driven-out*: And if in *Over-runing* the whole *Sheet* it be not *Driven-out*, he muſt *Set* ſo many *Lines*, of the following *Matter* as will make up the laſt *Page*.

Many times either for *Getting-in* or *Driving-out*, the *Compoſiter* will chuſe to *Over-run* in his *Stick*, and then he *Wets* the *Page* he is to *Over-run*, with the *Spunge* (that the *Letter* may the better ſtick together) and he ſeparates ſo much of the former part of the *Page* as he intends to *Over-run*, from the reſt of the *Page*, and places himſelf before the *Notches* of the *Letter*, and takes up about an Inch and an half or two Inches of the firſt Separated *Line*, and brings it to the *Stick*; and as it it is coming along he turns the *Notches* upwards, and places that *Taking up* in the *Stick*. When he *Takes-up*, he places the Inſide of the firſt Joynt of his middle Finger of his right Hand againſt the beginning of that *Line*, and the Ball of his Thumb againſt the other end of that *Taking-up*, and the Ball of his Fore-finger behind the *Taking-up*, about the middle of it, and ſo pinching it lightly brings it to his *Stick*, as aforeſaid. And having thus by ſeveral *Takings-up*, gotten a *Line* into his *Stick*, he looks it over to ſee what *Spaces* or other *White* he can take out or put in, according as he has either *Left-out* or *Set-twice*, and then he *Juſtifies* the *Line* again, as was ſhew'd in ¶ 5. of this Section. And thus he *Over-runs Line* after *Line*, till

till he has *Gotten-in* or *Drove-out* his *Leaving-out*, or his Twice *Set Matter*.

If the *Compoſiter* is not firmly reſolv'd to keep himſelf ſtrictly to the Rules of good Workmanſhip, he is now tempted to make *Botches*; viz. *Pidgeon-holes*, *Thin-Spaces*, no *Space* before a *Capital*, *Short* &s, *Abbreviations* or *Titled Letters*, *Abbreviate Words*, &c. And if Botching is in any Caſe excuſable, it is in this; for with too great *Spacing-out* or too *Cloſe Setting*, he many times may ſave himſelf a great deal of Labour, beſides the vexation of mind, and other accidental miſchiefs that attend *Over-running*.

It ſometimes chances that a *Compoſiter*, by having two or more *Pages* in his *Sheet* with the ſame *Direction-line*, or by miſtaking the right place of his *Page* when he ſet it by on a Paper under his *Caſe*, as was ſhew'd ¶ 7. of this Section, or by ſome other accident that may happen; I ſay it ſometimes happens (but ſeldom through too much care) that he *Tranſpoſes* two *Pages*, or more, in his *Sheet*: In this caſe he *Unlocks* that *Quarter*, or thoſe *Quarters* the *Pages* are in, and looſning the *Croſs* or *Croſſes* from thoſe *Pages* and their *Furniture*, takes the reſt off the *Correcting-ſtone* with their *Furniture* about them: And if it be a *Folio* or *Quarto* he does not wet the *Pages*, becauſe thoſe *Forms* have *Furniture* about every ſide of the *Page*, which will keep up the *Letter* from falling down; But he only places the Balls of his two Thumbs againſt the outſide of the *Furniture*, about the middle of the *Head* and *Foot* of the *Page*, and the inſides of his two middle Fingers, aſſiſted by his Fourth and Little Fingers,

gers, in a parallel poſition to his middle Fingers, (to ſtrengthen them againſt the *Furniture*) about the middle of the *Sides* of the *Page*, letting the length of his Fingers reach as far from each corner of the *Page* towards the middle of it as he can, and ſo by a ſteady preſſing the Balls of his Thumbs and the Balls of his Fingers on each Hand towards each other, he draws, or as he ſees moſt convenience, thruſts the whole *Page* out of its wrong place, and ſets it by on the *Stone*, till in the ſame manner he removes the other *Tranſpos'd Page* into the place of the firſt remov'd *Page*: And thus if there be more than two *Tranſpos'd Pages* in the *Sheet*, he removes them all, and *Sets* the right *Pages* in their right places.

But if it be an *Octavo* or *Twelves*, or any other *Form* that has *Gutter-ſticks* between two *Pages*, he muſt Wet thoſe *Pages* he leaves on the *Stone*, becauſe when he removes one *Page*, by the help of the *Gutter-ſtick*, one ſide of the other *Page* will ſtand *Naked*; and conſequently with the Shaking, Joggling, or Trembling of the *Stone* or Floor, the *Letters* on that ſide will be in great hazard of falling down, eſpecially if the *Face* of the *Stone* happens not to be truly Horizontal: I ſay, happens not to be truly Horizontal, becauſe the *Stone* is ſeldom laid with any caution, but only by gueſs.

Having placed the *Pages* in their right places, he again lays the *Chaſe* about them, and *Locks* them up again, as was ſhew'd in ¶ 7. of this Section: Then he carries the *Form* to the *Preſs*, and lays it on the *Stone* for a *Second Proof*, and ſometimes for

a

a *Third Proof*; which having *Corrected*, he at laſt brings the *Form* to the *Preſs*, and again lays it on the *Stone* Right, viz. in *Folio's* and *Octavo's* with the *Foot* of the *Firſt* or *Third Page* (which he eaſily knows by their *Signatures*) towards him, and the ſide of it next the *Plattin*: And in *Quarto's* and *Twelves*, with the *Foot* of the *Firſt* or *Third Page* next the *Tympan*.

After all this *Correcting* a *Reviſe* is made, and if any *Faults* are found in any *Quarter* of it, or in all the *Quarters*, he calls to the *Preſs-man* to *Unlock* that *Quarter*, or the whole *Form*, that he may *Correct* thoſe *Faults*: For when the *Form* is on the *Preſs* it is not the *Compoſiters* task to *Un-lock* the *Form*: Neither would a good *Preſs-man* be content he ſhould make a knocking on his *Preſs*, eſpecially if the *Preſs-man* have *Made-ready* his *Form*, as ſhall be ſhewed in the next Section.

¶ 9. *Of* Counting *or* Caſting off Copy.

Counting or *Caſting off Copy* (for both Phraſes are indifferently us'd) is to examine and find how much either of *Printed Copy* will *Come-in* into any intended number of *Sheets* of a different *Body* or *Meaſure* from the *Copy*; or how much *Written Copy* will make an intended number of *Sheets* of any aſſigned *Body* and *Meaſure*.

The Rule and Method of *Counting off* either *Printed* or *Written Copy* is the ſame, only *Written Copy* is more difficult, becauſe ſubject to be irregularly Writ: Therefore if I ſhew you how the *Compoſiter Caſts*

Caſts off Written Copy, I do at the ſame time inform you how to *Count off Printed Copy*.

The *Compoſiter* therefore firſt conſiders what *Bodied Letter* his Work is to be wrought on: then he carefully peruſes the *Copy*, conſidering with himſelf whether it be evenly Written or unevenly Written, *viz.* whether it be throughout of an equal ſiz'd Hand, or whether part be cloſe Written and part wide Written; if it be an equal ſiz'd Hand, that is, equally cloſe Written in general, as well between *Letter* and *Letter*, *Word* and *Word*, as between *Line* and *Line*, he has ſcarce more trouble to *Count it off* than *Printed Copy*.

Wherefore, the *Meaſure* being given, he *Compoſes* one *Line* in his *Meaſure*: The *Matter* he *Compoſes* he chuſes out of that part of his *Copy* that in his Judgement he admits is moſt indifferently Written, between Wide and Cloſe, as being ſuch as his whole *Copy*, one part with another, will likelieſt *Come-in* alike with. This *Line* being *Compos'd*, he conſiders how much of his *Copy* it takes up, *viz.* whether it runs *Line* for *Line*, or whether two *Lines* of his *Copy* make one *Line* in his *Stick*; or whether a *Line* and an half, or a quarter, or half quarter of his *Copy*, *&c.* make one *Line* in his *Stick*; or whether a *Line* of his *Copy* make two *Lines* in his *Stick*, or a *Line* and a half, or a quarter, or half a quarter, *&c.* and accordingly calculates what juſt number of *Lines* will make another juſt number of *Lines* in his *Stick*. For Example.

If his *Copy* and *Meaſure* run *Line* for *Line*, then conſequently 10, 20, 30 *Lines* of the *Copy* will make

10,

10, 20, 30 *Lines* in the *Measure*; and accordingly he counts what number of *Lines* in his *Copy* will make a *Page*; and by that, what number of *Lines* will make two *Pages*, four *Pages*, eight *Pages*, and consequently so many *Pages* and *Sheets* as he is to *Count off*.

If two *Lines* of *Copy* make one *Line* in the *Stick*, then consequently ten *Lines* in the *Copy* will make five *Lines* in the *Stick*; twenty *Lines* in the *Copy* ten *Lines* in the *Stick*, &c.

If a *Line* and a half of the *Copy* make one *Line* in the *Stick*, then fifteen *Lines* of *Copy* makes ten *Lines* in the *Stick*, thirty makes twenty, &c.

But a pair of *Compasses* makes the best expedition in *Counting off* of *Copy*, and (by my experience) I have found the surest way. I *Compose* one *Line* as aforesaid; if the *Line* I *Compos'd Gets-in* part of the next *Line*, viz. the second *Line* of the *Copy*, I place one Foot of a pair of *Compasses* at the beginning of the *First Line*, and open the other Foot to what was *Got-in* of the *Second Line*, and turn the *Compasses* about upon the Foot in the Second *Line*, till the other Foot reach the *Third Line* of the *Copy*; then turn about the Foot in the *Third Line* of the *Copy* till the other Foot falls in the *Fourth Line* of the *Copy*; and so from the *Fourth*, to the *Fifth*, *Sixth*, &c. till the *Compasses* end with a *Line* in the *Copy*, or near the end of a *Line*, remembring as I go along, how oft I turn'd the *Compasses* about. Suppose, for Example, seven times: Then I number the *Lines* of *Copy*, beginning with the first *Line* and ending with the last *Line*, that the Points of the

the *Compaſſes* were turn'd over, and find them Eight, Nine, Ten, *&c.* and ſay Eight, Nine, Ten, *&c. Lines* of the *Copy*, makes Seven *Lines* of the *Meaſure.*

As now I have ſhew'd you how I *Count off Copy* if it come in more than *Line* for *Line*, ſo I ſhall ſhew you how I proceed if a *Line* in the *Copy Drive out* in the *Meaſure.*

It is but placing one Foot of a pair of *Compaſſes* at the farther end of the firſt *Line*, and opening the other Foot to the place where the *Compos'd Line* ended, and by turning about the *Compaſſes*, as before, to the Second, Third, Fourth *Lines*, *&c.* till they end in the beginning of a *Line* in the *Copy*; for then (as before) counting the number of *Lines*, beginning with the firſt, and ending with the laſt; Suppoſe Eight, Nine, Ten, *&c.* I ſay Eight, Nine, Ten, *&c. Lines* of the *Copy* makes ſo many *Lines* as is the number of times the Feet of the *Compaſſes* were turned about, between the firſt *Line* and the laſt *Line.*

Another way Arithmetically perform'd.

Suppoſe it be requir'd to know how many *Sheets* 127 *Pages* of *Written Copy* will make? I count the number of *Letters* contained in an ordinary *Written Line* of *Copy*, ſuch a *Line* as I gueſs is likely to *Run Line* for *Line* with the generality of the reſt of the *Copy*: And (for Example) I find 43 *Letters* in that *Line*: Then I count the number of *Lines* in an whole *Page*, and find 35 *Lines*, I Multiply 43 by 35,

35, the Product is 1505 for the number of *Letters* in an whole *Page*: Then I multiply 1505 by 127, the number of *Pages* in the whole *Written Copy*; the Product is 191135, the number of *Letters* in the whole *Written Copy*.

If it be now required to know how many *Sheets* in *Quarto*, of the *Engliſh Body* this *Written Copy* will make, agreeable to any *Meaſure* already *Printed?* As for Example, the length of a *Page* given is 33 *Lines*, and in one *Line* is contained 47 *Letters*: I multiply 47, the number of *Letters* in one *Line*, by 33, the number of *Lines* in a *Page*, the Product is 1551. With this Product I divide 191135, the number of *Letters* in the whole *Written Copy*, and the Product gives 123, that is, 123 *Pages* in *Quarto*, which divided by 8, the number of *Pages* in one *Sheet*, gives 15 *Sheets* and 3 *Pages*.

If it be required to know how many *Sheets* it will make of *Pica* in an *Octavo*, or of *Long Primer* or *Brevier* in *Twelves*, *&c.* the manner of Working is the ſame: For Multiplying the number of *Letters* in one *Line* by the number of *Lines* in one *Page*, and Deviding the number of *Letters* in the whole Work (ſuppoſe, as in the foregoing Operation by 191135) by the number of *Letters* in one *Page*, the Product gives the number of *Pages* in the Quotient: And then at laſt Deviding the number of *Pages* by 16 if an *Octavo*, or 24 if *Twelves*, *&c.* you have in the Quotient the number of *Sheets*, and in the Remain (if any be) the number of *Pages*.

Theſe two laſt ways are the ſureſt Rules for *Counting off Copy*: But yet the *Compoſiter* has ſeveral Conſidera-

ſiderations upon his *Copy* before he dares conclude he has truly and exactly *Counted off*.

For firſt, a ſtrict regard muſt be had to the *Breaks* that come in the *Copy*: For long *Breaks* in the *Copy* are generally likely to be *Got-in*, and conſequently a *Line* is *Got-in*: But ſhort *Breaks* often *Drive-out* a *Line*. Therefore though the *Compoſiter* has already in general *Caſt off* his *Copy*, yet he more particularly conſiders his *Breaks*; and indeed they ſerve as ſo many Regulators to him, to keep him within the bounds of his *Counted off Copy*: For every *Break* he examines by the number of *Lines* from the laſt *Break*, by the length of the *Break*, and by the cloſe or wide Writing of his *Copy*, whether it will be *Got-in* or *Drove-out*, and accordingly marks it in his *Copy*, before he reckons he has done *Counting off*.

A *Break* to be *Got-in* he marks thus [, and adjoyns in Numerical Figures, the number of *Lines* the *Matter* between the laſt *Break* and it will make. A *Break* to be *Drove-out* he marks thus - - -, and (as aforeſaid) adjoyns Numerical Figures to remember him what number of *Lines* he accounted that *Matter* to make from the laſt *Break*.

If *Chapters*, *Sections* or *Paragraphs* happens in the *Copy*, the *Compoſiter* takes room enough to ſet them and their Titles gracefully in; and marks in Numerical Figures what number of *Lines* he aſſigns for it.

If as he *Counts off* his *Copy* he finds *Abreviated Words*, he tells the *Abreviated Words* to the full number of *Letters* that ſpells the Word at length, becauſe in *Compoſing* he *Sets* thoſe Words at length:

And

And ſhould he not conſider it in his *Counting off*, he would in *Compoſing* find his *Matter Run out* from his *Copy*.

Scarce any *Copy* is ſo regularly Written (as hath ſeveral times before been hinted) but that ſome places are Wider, and other places Cloſer Written, than the generality of the *Copy*, wherefore he conſiders both theſe accidents in his *Copy*, and accordingly allows for them.

If it happens that much *Italick* comes in the *Copy*, as ſometimes two or three *Lines*, or more, or half a *Page*, an whole *Page*, or ſeveral *Pages*; the *Compoſiter* conſiders *Italick* is thinner than *Roman*, and conſequently *Gets-in* more than *Roman* does, and therefore in his *Counting off* will allow accordingly for it.

The proportion that I allow for it is as 9 to 10, or which is all one, as 45 *Roman Letters* is to 50 *Italick Letters*: So that if a *Meaſure* holds 45 *Roman Letters*, the ſame *Meaſure* will hold 50 *Italick Letters*.

As *Italick* is thinner than *Roman*, ſo the *Engliſh Face* is thicker than the *Roman*; wherefore if he meets with the *Engliſh Face*, he conſiders that accordingly.

I find the proportion to be as 40 to 43, *viz.* 40 *Engliſh Faced Letters* fill the ſame *Meaſure* that 43 *Roman* does; and conſequently for every 40 *Lines* to be *Set* in *Engliſh* he muſt *Count off* 43 *Lines*; and ſo proportionaply for more or leſs.

But yet I ſhall not deliver theſe my Obſervations on the *Italick* and *Engliſh* to hold thus in all *Italicks* and

and *Engliſhes*, nor all *Romans* of the ſame *Body* to be of an equal Thickneſs, becauſe ſome are *Cut* Thicker or Thinner on the *Face*: And beſides, ſometimes *Letter Caſt*, though in the ſame *Matrices*, are by the *Founder Caſt* Thicker or Thinner, and conſequently in either Circumſtance *Drive-out* or *Get-in*: Wherefore a *Compoſiter* will conſider what *Fount* of *Letter* it is he Works on, and accordingly *Count off* his *Copy*.

¶ 10. *Of* Papering up *of* Pages.

Papering up of *Pages*, or *Papering* up of *Letter*, are two phraſes indifferently uſed for the ſame meaning. Though this Operation ſeems ſo ſleight and trivial that it may be thought not worth mentioning, yet it being a task incumbent on the *Compoſiter*, it becomes mine too to ſhew how it is performed.

It is thus: When a *Book* is finiſht, and the *Compoſiter* is to *Work* on other *Letter* afterwards; the *Wrought off Letter* is to be *Papered up*. The *Preſsman* therefore having *Waſht* the *Wrought-off Forms*, the *Compoſiter Rinces* them, as was ſhewed in Section 22. ¶ 3. He *Rinces* the *Letter* as well as if it were *Rinced* for preſent uſe, or rather better: for elſe the *Inck* that is deſolved among the *Ly* would, with long ſtanding by, harden between the *Letter*, and make the *Letter* ſtick ſo faſt together that when it comes afterwards to be *Deſtributed*, the *Compoſiter* ſhall not without great difficulty and trouble get them aſunder. This ſticking together of the *Letter* is call'd *Baking* of the *Letter*. And *Compoſiters* in this Caſe ſay, *The Letter is Bak'd*.

The

The *Compoſiter* having *Stript* the *Form*, whips *Cords* as tight as he can about every *Page*, not to *Tye* them up for good and all, but aſwell to keep up the *Letter* on the ſides of the *Pages* that it fall not down, while it ſtands by for ſome dayes on the *Letter-board* to *Dry*, as to keep the *Letter* tight together that he may the better with his Hands take an whole *Page* at once off the *Letter-board.*

When it is *Dry*, if the *Pages* are not too broad for his Graſp, he places his Body againſt a ſide of the *Pages*, and the Balls of his two Thumbs againſt the ſide of a *Page*, one indifferently between the middle and *Head* of the *Page*, and the other between the middle and *Foot* of the *Page*, and with the three Fore-fingers of each Hand placed on the other ſide of the *Page*, graſps the *Page* between them and his Thumbs; and to keep his Hands the ſteddier, ſtretches the inſides of his Little-fingers one againſt the *Head* the other againſt the *Foot* of the *Page*: And having the *Page* thus Steddy between his Hands cloſe preſt on all the ſides of the *Page*, he with a quick motion nimbly rears one ſide of the *Page* upright, and receives the weight of it either on the Balls of his Thumbs or on the Balls of his Fingers, as beſt likes him; and ſo carries it to his *Galley* and *Tyes* it firmly up; as was ſhewed ¶ 6. of this Section.

As he took and *Tyed* up this one *Page*, ſo he takes and Tyes up all the *Pages*. But if a *Page* be too big for his Graſp, he underlays the *Slice* of a *Galley* till it lye within a Scaboard ſo high as the edge of the *Letter-board*, and getting ſome one to hold the *Slice* ſteddy againſt the edge of the *Letter-board* he ſlides the

the *Page*, with the *Head* or *Foot* forwards upon the *Slice*, and ſo carries the *Page* to the *Galley* and *Tyes* it up, as aforeſaid.

He ſends the Boy to the Warehouſe-keeper for ſo much Paper as he finds he ſhall want; and if the *Pages* are ſmall, he layes a ſingle Sheet down on the *Correcting-Stone* or on a *Letter-board*, and ſets a *Page* down on that Sheet of Paper, ſo as the farther Side of the *Page* may ſtand towards one end of the Sheet; and ſo far on the Sheet, as that the end of it may lap over the *Face* of the *Letter*, and about half way down the *Shank* of the *Letter*, on the hither ſide the *Page*: And ſmoothing the Paper tight over the *Face* of the *Letter*, and half way down the *Shank* on the hither Side, and quite down the *Shank* at the *Head* and *Foot* of the *Page*, he folds the looſe Paper that hangs over the ends of the *Page*, from each corner of the *Page*, to end in an Angle in the middle of the looſe Paper, and then folds the other end of the Sheet of Paper tight over the Paper that covers the *Face* of the *Letter*; and alſo folds the looſe Paper at the ends of the *Page* down into Angles, as he did the former looſe ends: Then rearing his *Page* over the further ſide, lays the *Face* downwards, ſtill ſmoothing the Paper tight, and folding in the un-folded corners, to meet in the ſame Angles with the former folded Angles in the middle of the looſe Paper: And thus ſo long as he has Paper to ſpare he turns his *Page*, wrapping it at leaſt twice, or if he can thrice about in Paper, folding and doubling down the Looſe Paper into Angles as before: And at laſt turns up thoſe Angles or Lappets either

either over the *Face* or Bottom of the *Letter*, and turns the *Page* upon thoſe folded Lappets, that its weight may preſs and keep them cloſe under the *Page*.

If the Pages are large, ſo as one *Sheet* will not compaſs them twice or thrice about, to be ſtrong enough to bear the *Letter*, which generally ſinks downwards into the middle of a *Page*, he lays two, or ſometimes three Sheets under the *Page*: And as he wrapt up the firſt Lay of Sheets, adds more to lengthen them out, that they may wrap at leaſt three or four times about the great *Page*.

Having thus *Paper'd up* the *Pages*, and folded the Lappets under them, he writes upon the upper ſide what *Letter* it is, *viz. Long-Primer Roman*, *Long-Primer Italick*, *Pica Roman*, *Pica Italick*, *Pica Engliſh*, *Engliſh Roman*, *Italick*, *&c.* and ſets them by for the *Maſter-Printer* to diſpoſe of.

§. 23. *Of the* Correcter, *and his Office.*

A *Correcter* ſhould (beſides the *Engliſh* Tongue) be well skilled in Languages, eſpecially in thoſe that are uſed to be Printed with us, *viz.* the *Latin*, *Greek*, *Hebrew*, *Syriack*, *Caldæ*, *French*, *Spaniſh*, *Italian*, *High Dutch*, *Saxon*, *Low Dutch*, *Welch*, *&c.* neither ought my innumerating only theſe be a ſtint to his skill in the number of them, for many times ſeveral other Languages may happen to be Printed, of which the Author has perhaps no more skill than the bare knowledge of the Words and their Pronunciations, ſo that the Or-

Orthography (if the *Correcter* have no knowledge of the Language) may not only be falſe to its Native Pronunciation, but the Words altered into other Words by a little wrong Spelling, and conſequently the Senſe made ridiculous, the purpoſe of it controvertible, and the meaning of the Author irretrievably loſt to all that ſhall read it in After times.

He ought to be very knowing in Derivations and Etymologies of Words, very ſagacious in *Pointing*, skilful in the *Compoſiters* whole Task and Obligation, and endowed with a quick Eye to eſpy the ſmalleſt *Fault*.

But I ſhall ſay no more of his Qualifications; but ſuppoſe him endowed with all neceſſary accompliſhments for that Office.

The *Compoſiter* either carries him a *Proof*, or ſends the Boy with it to his Appartment, which is commonly ſome little Cloſet adjoyning to the *Compoſing-room*: And the *Maſter-Printer* appoints him ſome one that is well skill'd in true and quick Reading, to Read the *Copy* to him, whom I ſhall call the *Reader*.

This *Reader*, as I ſaid, Reads the *Copy* to him, and the *Correcter* gives attention; and at the ſame time carefully and vigilantly examines the *Proof*, and conſiders the *Pointing*, *Italicking*, *Capitalling*, or any error that may through miſtake, or want of Judgement be committed by the *Compoſiter*.

If he finds one *Letter Set* inſtead of another, as in this Word tho for the, he daſhes out the wrong

Letter

Letter thus thø, and Writes the *Letter* it ſhould be on the Right Hand *Margin* of the *Page*, right againſt the ſame *Line*, and makes a Daſh behind it, as you may ſee in the *Margin*. e/

If two or three, or more Words in the ſame *Line* have *Faults* in them, as in theſe Words, Pøtienɕe peɬ fɕrce; where firſt an o is *Set* inſtead of a, e inſtead of c, t inſtead of r, and c inſtead of o: Theſe he marks in an orderly ſucceſſion towards the Right Hand, againſt the ſame *Line*, as you may ſee in the *Margin*. a/ c/ r/ o/

But if one word be *Set* inſtead of another, as Scoff inſtead of Smile, here he marks Scoff out thus ~~Scoff~~, and writes Smile, as in the *Margin*. Smile /

If a *Word* or *Words*, or *Letter*, or *Point* be *Left out* he makes this mark ∧ where it is *Left out* for a mark of Inſertion, and Writes in the *Margin* what muſt come in.

If a *Space* be *Left out* he makes the former mark of Inſertion where it ſhould come in, and makes this mark ⁜ in the *Margin*. ⁜/

If a whole Sentence be *Left out*, too long to be Writ in the *Margin*, he makes the mark of *Inſertion* where it is *Left out*, and only Writes (Out) in the *Margin*. If the Sentence *Left out* be not very long, he Writes it under the *Page*, or on the Left Hand *Margin* of the *Page*: But if (Out)

it

it be too large to be Writ in the *Margin*, or under the *Page*, he Writes in the *Margin*, See the Copy. (See the Copy)

If a Word or Sentence be *Set* twice, as Him Him, he marks out one Him thus Him, and makes this mark ⸗ in the *Margin*, for *Deleo*, to take out. ⸗/

If a *Letter* be turned thus ꝺ, he daſhes it out as you ſee, and makes this mark in the *Margin*. ꝺ/

If Words are *Tranſpoſed*, that is, if one Word ſtand in another Words place, as, no I love Swearing, and it ſhould be, I love no Swearing; he marks this *Fault* thus, ⌈no⌉ I love ⌊Swearing, and makes this mark ⸗ in the *Margin*. The like mark he makes in *Matter* and *Margin* if two *Letters* are *Tranſpos'd*. ⸗/

If a *Space* or an m or n *Quadrat*, *&c.* ſtick up, and *Print Black*, as between theſe words, he marks in the *Margin* thus. |

If a *Word* be *Set* in *Roman Letter* inſtead of *Italick* or *Engliſh Letter*, he daſhes the Word underneath thus, and Writes *Ital.* or *Eng.* in the *Margin*. Ital/ Eng/

In like manner, if a ſingle *Let-* or more *Letters* be *Set* in *Roman Let-*

Letter, and it ſhould be *Italick* or *Engliſh Letter*; or if in *Engliſh* or *Italick*, and it ſhould be *Roman Letter*, he daſhes the *Letter* or *Letters* thus underneath, and writes *Ital.* Ital/ Rom/ Eng/ *Rom.* or *Eng.* in the *Margin*: Or if *Lower-Caſe Letters* be *Set* inſtead of *Capitals*, he daſhes them underneath, and Writes *Capt.* in the *Margin.* Capt./

Having Read the *Matter* of the *Proof* he examines again if the *Form* be right *Impos'd*, for though he before turn'd the *Pages* in the *Proof* as he read them according to their orderly places, yet he will ſcarce truſt to that alone, but again examines them on purpoſe, and diſtinctly, which he does not only by the *Direction Word*, but by examining the whole Sentence the *Direction* comes in, both at the end of the *Page*, and the beginning of the next *Page*.

He examines that all the *Signatures* are right, and all the *Titles* and *Folio's*.

If the Work be large *Forms* and ſmall *Letter*, he has a ſecond, and ſometimes a third *Proof*, which he Reads as the firſt.

After the Second or Third *Proof* he has a *Reviſe*, which is alſo a *Proof-ſheet*: He examines in this *Reviſe*, *Fault* by *Fault*, if all the *Faults* he markt in the laſt *Proof* were carefully mended by the *Compoſiter*; if not, he marks them in the *Reviſe*.

Thus you ſee it behoves him to be very careful as well as skilful; and indeed it is his own intereſt to be both: For if by his neglect an *Heap* be ſpoiled, he is obliged to make Reparation.

A D-

Advertiſement to AUTHORS.

Although I have in the precedent Exerciſes *ſhew'd the Accompliſhments of a good* Compoſiter, *yet will not a curious Author truſt either to his Care or Abilities in* Pointing, Italicking, Capitalling, Breaking, &c. *Therefore it behoves an Author to examine his* Copy *very well e're he deliver it to the* Printer, *and to Point it, and mark it ſo as the* Compoſiter *may know what Words to* Set *in* Italick, Engliſh, Capitals, &c.

For his Italick *Words he draws a line under them thus*: *For* Engliſh *Words he draws two lines under them thus*; *and for* Capitals *a line of Pricks thus, or elſe draws a line with Red Inck.*

If his Copy, *or any part of it, be Written in any Foreign Language, he is ſtrictly to ſpell that Foreign*

Foreign Language right: Becauſe the Compoſiter, *as I ſaid in the Preface to this* §, *takes no notice of any thing therein but the very* Letters, Points *and* Characters *he finds in his* Copy.

If an Author have not (through haſte in Writing) made Breaks *in proper places; when he comes to peruſe his* Copy *he may find cauſe to make ſeveral* Breaks *where he made none: In ſuch a caſe he makes a* Crotchet [*thus, at the Word he would have begin his new Paragraph.*

Thus in all particulars he takes care to deliver his Copy *perfect: For then he may expect to have his Book perfectly Printed. For by no means he ought to hope to mend it in the* Proof, *the* Compoſiter *not being obliged to it: And it cannot reaſonably be expected he ſhould be ſo good Natured to take ſo much pains to mend ſuch Alterations as the ſecond Dictates of an Author may make, unleſs he be very well paid for it over and above what he agreed for with the* Maſter-Printer.

The next *Exerciſes* (God willing) ſhall be the

the *Preſs-mans* Trade, The Office of the *Ware-houſe-keeper*, The *Cuſtoms* of the *Chapel*, And a *Dictionary* to explain the hard Words and Phraſes uſed in the whole Practice of *Typography*: Which will be the Concluſion of this Second Volume.

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MECHANICK EXERCISES:

Or, The Doctrine of

Handy-works.

Applied to the

Press-mans Trade.

PREFACE.

THE Printing-Press *that a* Press-man *works at, is a Machine invented upon mature consideration of Mechanick Powers, deducted from Geometrick Principles; and therefore a* Press-man *indowed with a competency of the Inventers Genius, will not only find great satisfaction in the contemplation of the harmonious design and Make of a* Press, *but as often as any Member, or part of it is out of order, he will know how to remedy any deficiency in it. This alone*

alone will intitle him to be an Underſtanding Preſs-man: *But his care and ſerious induſtry in the Phyſical and Manual performance of his Task, muſt give him the Reputation of a good and curious Work-man.*

§. 24. ¶. 1. *Of the* Preſs-mans *Trade.*

AN underſtanding *Preſs-man* therefore knows not only how to direct a Printers Joyner to Set up and Faſten a *Preſs* when it is made, but alſo how to give a ſtrange Joyner and Smith inſtructions how to make a *Preſs*, and all its parts, in a Symetrical proportion to any unwonted ſize, if in a ſtrange place he ſhall have occaſion to uſe it.

I have already at large inſiſted upon the dimenſions of every particular Member of an ordinary ſiz'd *Preſs* in § 10, 11. But in thoſe Sections did omit ſhewing you how the *Preſs* is Set up and Faſtned; yet promiſed to do it when I came to the *Preſs-mans* Trade: It being not only a care incumbent upon him, but a Curioſity he would aſſume to himſelf to direct and ſee the Joyner ſet and faſten it in a Steddy and practical poſition. We will ſuppoſe a ſtrange Joyner, and not a Printers Joyner (as here in *London* he may be furniſht with) who generally by their conſtant converſation in Printers work, do or ought to know as much of Setting up a *Preſs* as the *Preſs-man* himſelf.

The Joyner therefore having ſet together the Frame, *viz.* the *Cheeks*, *Feet*, *Cap*, *Head*, *Till*, *Winter*, *Hind-Poſts*, *Ribs*, *Carriage*, *&c.* The *Preſs-man* directs, and ſees him perform as follows by and by.

by. For I ſhould have told you that before the *Head* is put into its place, the *Preſs-man* beſmears the whole Tennanted ends and Tennants well with Soap or Greaſe, and alſo the Morteſſes the *Head* ſlides in, and ſo much of the *Cheeks* as the ends of the *Head* work againſt, that the *Head* may the eaſier work up and down.

He alſo before the *Carriage* is laid on the *Ribs*, beſmears the two edges of the *Plank* and the under ſide of the *Coffin* well with Soap or Greaſe; and the like he does by the inſide of the *Wooden Ribs*, that they may ſlide the eaſier beſide each other.

Now to return to the Joyner. The *Preſs-man*, I ſay, directs and ſees him perform as follows.

1. To place the *Feet* upon an Horizontal Level Floor, as I ſhewed in the Firſt Volume, Numb. 7. § 7. when I ſpoke of the Level that Carpenters uſe.

2. To erect the *Cheeks* perpendicularly upright, as I ſhewed *Vol.* 1. *Numb.* 7. § 8. when I treated of the *Plumb-line*.

3. To place the *Stays* or *Braces* ſo as the *Preſs* may be kept in the moſt Steddy and Stable poſition, as well to give a check to the force of the hardeſt *Pull* he makes, as to the hardeſt Knock the *Bar* ſhall make againſt the farther *Cheek*, if by chance (as ſometimes it does) it ſlip out of the *Preſs-mans* Hand.

This conſideration may direct him to place one *Brace* againſt the end of the *Cap* that hangs over the hither *Cheek*, and in a range parallel with the fore and hind ſide of the *Cap*: For the more a *Brace* ſtands

ſtands aſlope to the two parrallel ſides, the leſs it reſiſts a force offered to the end of them, *viz.* the hither end of the *Cap*, which is one main *Stay* to the whole *Preſs*.

If he place another *Brace* againſt the hinder corner of the farther end of the *Cap*, it will reſiſt the *Spring* of the *Bar*, if it ſlip out of the *Preſs-mans* Hand.

And if he places two other *Braces*, one againſt the hither corner of the hind-ſide of the *Cap*, and the other againſt the farther corner of the fore-ſide of the *Cap*, the *Preſs* will be ſufficiently *Braced-up*, if the Room will afford convenience to place the farther end of the *Braces* againſt.

By convenience I mean a firm ſolidity to place the end of the *Braces* againſt, be it either a Stone-wall, Brick-wall, or ſome principal Poſt, or a Girder, *&c.* that will not ſtart or tremble at the force of a *Pull*.

The *Braces* ought to be ſtraight, and of Subſtance ſtrong enough proportionable to their Length: And if convenience will allow it to be fixed in ſuch a poſition that they ſtand in the ſame ſtraight Line with the upper Surface of the *Cap*, viz. that the farther end of the *Brace* neither dips lower or mounts higher than the upper ſide of the *Cap*. Neither ought the *Brace*, though thus poſited, to ſtand aſlope or askew, *viz.* make unequal angles with the ſide of the *Cap* it is faſtned to, but it ought to ſtand Square, and make right angles with the reſpective ſide of the *Cap*; becauſe in thoſe Poſitions the *Braces* beſt reſiſts the force of continued *Pulls*.

But

But though this be by the Rules of Architecture, the ſtrongeſt, firmeſt, and moſt conciſe method for *Bracing-up* a *Preſs*, yet will not the Room the *Preſs* is to ſtand in always admit of convenience to place the *Braces* thus: Therefore the *Preſs-man* ought to conſider the conveniences of the Room, both for the places to fit the *Braces* to, and the poſitions to ſet the *Braces* in; placing his *Braces* as correſpondent as he can to theſe Rules.

If he doubt the crazy make of the *Winter*, he will cauſe two *Battens* of three or four Inches broad, and a full Inch thick, to be nailed cloſe to the outer ſides of the Feet of the *Preſs*, which will both ſtrengthen the *Winter*, and keep the lower part of the *Cheeks* from flying out, and alſo hinder the *Preſs* from working into a twiſting Poſition.

And though I am loath to name the *Under-laying* of the *Feet*, becauſe at the beſt it is but a *Botch*, and Subjects the whole *Preſs* to an unſtable poſition yet becauſe by accident it may happen, the aforeſaid *Battens* will alſo keep theſe Underlays from working out.

Joyners that Work to Printers have got a Cuſtom to place a ſtrong Piece of Timber between the middle of the *Cap* and the Ceiling or Roof of the Room, which can do no ſervice there, unleſs they intend to ſupport the Roof: For the weight of the *Preſs* alone will keep it cloſe to the Floor, and the ſtrength of Stuff between the Morteſſes in the *Cheeks* and the ends of them, are intended to be made ſtrong enough to reſiſt the Riſing of the *Head*: For ſhould that ſtrength of Stuff ſtart, neither their ſtrong Piece of Timber,

Timber, nor the ſtrength of the Roof, would reſiſt the Riſing of the *Head*: but *Head* and *Cap*, and Timber and Roof too, would all ſtart together, as by experience I have ſeen. For indeed the ſtrength of Stuff between the Morteſſes that the Tennants of the *Head* works in, and the upper ends of the *Cheeks*, and the Strength of Stuff between the Morteſſes that the Tennants of the *Winter* lyes in, and the lower ends of the *Cheeks* reſiſt the whole ſtrength of the working of the *Spindle* out of its *Nut*. So that the *Cap* ſuffers no preſſure upwards or the *Feet* downwards, unleſs the force of the *Spindle* break the ſtrength of Stuff between the *Head* and the upper ends of the *Cheeks*, or the ſtrength of Stuff between the *Winter* and the lower ends of the *Cheeks*.

The *Preſs* being thus far faſtned, the *Carriage* is laid on; and if the Joyner performed his Work well in making the Wooden-work, it will at firſt lye exactly Horizontal; if not, it muſt be mended where it is amiſs before the *Preſs-man* can *Lay* the *Stone*; and before the *Stay* of the *Carriage* can be fitted under the end of the *Ribs*.

¶ 2. *Of* Laying *or* Bedding *the* Stone.

We will ſuppoſe the Wooden *Ribs* to lye on the *Winter* exactly, flat and Horizontal, therefore the *Preſs-man* now *Lays* the *Stone*: If the *Stone* be a good thick Marble Stone, and all the way of an equal thickneſs between the *Face* and the Bottom, he may *Bed* or *Lay* it upon ſo many large *Sheets* of Brown Paper as will raiſe the *Face* about a *Brevier*

vier above the Superficies of the *Coffin*, and the *Stone* will do good ſervice.

Or he may *Bed* or *Lay* it on Bran; which indeed the *Preſs-man* moſt commonly does, if the *Stone* be qualified as aforeſaid.

The manner how he lays it on Bran is thus,

He graſps an handful of Bran and lays it down at the hither corner of the *Coffin* on his Left Hand, and it will form it ſelf into a ſmall Hillock; then he takes another handful of Bran, and lays that down in the ſame manner near the firſt, towards the further ſide, and ſo a third, *&c.* towards the further ſide, till he have filled the whole breadth of the *Coffin*. Then he in like manner lays another row of Hillocks, beginning at the hither ſide of the *Coffin*; and ſo a third and fourth row, *&c.* till the length of the *Coffin* is filled as well as the breadth: Then with a *Riglet* he drives the tops of theſe Hillocks into the Valleys between them, to ſpread the Bran into an equal thickneſs in the whole *Coffin*. Which done, he lays the *Stone* upon it.

But in this caſe he conſiders to lay ſo much Bran thus into the *Coffin* as may make the *Face* of the *Stone* riſe about a *Great Primer* higher than the Superficies of the *Coffin*: For elſe he muſt take all his Bran out again, and new-lay his Hillocks, making them bigger or leſs, till he have fitted the *Face* of the *Stone*, to lye about a *Great Primer*, as aforeſaid, higher than the Superficies of the *Coffin*.

But if it be a thin *Stone*, or a *Purbeck* or *Portland Stone*, it is great odds if it be thus *Laid*, but it breaks with the firſt *Pull*: Therefore theſe *Stones* are

are generally *Laid* or *Bedded* with Plaiſter of *Paris*, which before it hardens, will of it ſelf run into an Horizontal poſition.

This Plaiſter of *Paris* is tempered with fair Water to the conſiſtence of Batter for Pancakes, or ſomewhat thicker, and ſuch a quantity is put into the *Coffin* as may raiſe the *Face* of the *Stone* about a Scaboard higher than the Superficies of the *Coffin*.

The different matter the *Stone* is *Laid* on is the reaſon why the *Face* is *Laid* of different heights above the Superficies of the *Coffin*: For by the force of a *Pull* about a dozen Sheets of Brown Paper may be ſqueez'd cloſer by a *Brevier Body*, which brings the *Face* of the *Stone* into the ſame Level with the Superficies of the *Coffin*. And Bran ſqueezes much more. But Plaiſter of *Paris* not at all.

When he *Lays* the *Stone* on Bran, or on Plaiſter of Paris, he and his Companions ſlings the *Stone* in two ſtrong Packthreds, placing one towards either end of the *Stone*; and each of them taking an end of each String in each of their Hands, with the *Face* of the *Stone* upwards, and brought as near as they can into an Horizontal Poſition, they with great care and caution let it into the *Coffin*, and as near as they can, ſo as the whole bottom of the *Stone* touch the *Bedding* all at once; leſt by raking the *Bedding* with any part of the bottom of the *Stone* firſt, the Horizontal form of the *Bedding* be broken.

Having laid the *Stone* down, they draw the Packthred from under it: And by ſqueezing a little Water out of a Spunge upon about the middle of the *Face* of

of the *Stone*, try whether the *Stone* lye truly Horizontal, which they know by the ſtanding of the Water: For if the Water delate it ſelf equally about the middle of the *Stone*, the *Stone* lies Horizontal: But if it have a propenſitude to one ſide more than another, the declivety is on that ſide, and the *Stone* muſt be new *Laid*.

Having laid it Horizontal, they *Juſtifie* it up with the *Juſtifiers* I mentioned in § 11. ¶ 17.

¶ 3. *Of* Setting *the* Rounce.

The *Rounce* being well *Set* does not only eaſe a *Preſs-man* in his Labour, but contributes much to Riddance in a train of Work.

In the old-faſhioned *Preſſes* uſed here in *England*, the *Preſs-man* finds often great trouble and loſs of Time in *Setting* the *Rounce*: Becauſe the *Girts* being nailed to the *Carriage-board* behind, and to the Frame of the *Coffin* before, he cannot alter the poſition of the *Rounce* without un-nailing and nailing the *Girts* again, both before and behind. Nay, and ſometimes though he thinks he has been very careful in *Winding* the *Girts* off or on the *Barrel* of the *Rounce*, as he finds occaſion requires; Yet by ſtraining either of the *Girts* too hard, or not hard enough, or by an accidental ſlip of either of the *Girts*, or by ſtirring the *Rounce* out of a Set poſition, when he thinks he has *Set* the *Rounce*, he has it to do again. Beſides, The *Carriage-board*, *Frame* of the *Coffin*, and the *Rounce-barrel*, all ſuffer tearing to pieces by often drawing out and driving in o Nails.

But

But in theſe new-faſhioned *Preſſes* all theſe inconveniences are avoided, for the *Preſs-man*, without nailing or un-nailing, *Sets* the *Rounce* to what Poſition he will, only by lifting up the Iron *Clicker* that ſtops the wheel: For then *Winding* off ſo much *Girt*, and *Winding* up ſo much *Girt* at the oppoſite end of the *Carriage*, his *Rounce* is *Set*, without hope or Hazzard.

He *Sets* the *Rounce* to ſuch a poſition, that when the fore-end of the *Tympan* will juſt lye down and riſe free, without touching the fore-edge of the *Plattin*, then a line drawn or imagined from the Axis of the *Handle* of the *Rounce*, to a Perpedicular or *Plumb-line*, let fall from the Axis of the *Spindle* of the *Rounce*, theſe two lines ſhall make an angle of about 45 degrees, which is half the Elevation between an Horizontal line, or Line of Level, and a Perpendicular, or Plumb-line.

¶ 4. *Of* Hanging *the* Plattin.

When the *Preſs-man Hangs* the *Plattin*, he lays a *Form* upon the *Preſs*, and about a Quire of Paper doubled upon it (this Quire of *Paper* thus doubled is called the *Cards*) then layes the *Plattin* upon the *Cards*, and ſo *Runs* the *Carriage* and *Plattin* in, till the middle of the *Plattin* lye juſt under the *Toe* of the *Spindle*: Then he puts the *Pan* of the *Plattin* in its place, and in part Juſtifies the *Head*, as ſhall be ſhewed in the next ¶. And he un-ſcrews the *Hoſe-ſcrews*, till the Spuares at the ends of the *Hoſe* come down to about a quarter of an Inch of the Square of the

the Socket they are fitted into in the ends of the *Garter*, and when the *Toe* of the *Spindle* is fitted into the *Nut* in the *Pan* of the *Plattin*, he examines by ſtraining a Pack-thred againſt the two foreſides of the *Cheeks* of the *Preſs*, whether the fore-edge of the *Plattin* is ſet in a parallel Range with the fore-ſides of the *Cheeks*: If it be not, he twiſts the ends till the edge of the *Plattin* ſtands parallel with the Pack-thred, and conſequently with the *Cheeks*.

Then with the *Bar* he *Pulls* the *Spindle* hard down upon the *Plattin*, and Sets the edges of a *Paper-board* between the *Bar* and the farther *Cheek* of the *Preſs*, to keep the *Bar* from ſtarting back.

And having provided fine Whip-cord, he knots a Nooſe on one end and puts it over one of the *Hooks* of the *Plattin*, laſhing the Whip-cord alſo upon the farthermoſt *Notch* of the *Hoſe-hook*, and again upon the *Plattin-hook*, and again upon the *Hoſe-hook*, and again upon the *Plattin-hook*: So that here is now three Laſhes of whip-cord upon the *Plattin-hook*, and upon the farthermoſt *Notch* of the *Hoſe-hook*. Wherefore he Laſhes his fourth Laſhing of whip-cord now upon the ſecond *Notch*, viz. the middlemoſt *Notch* of the *Hoſe-hook*, reiterating theſe Laſhes on the middlemoſt *Notch* and *Plattin-hook* alſo three times. And thus in like manner Laſhes alſo three Laſhes upon the third and laſt *Notch* of the *Hoſe-hook* and alſo of the *Plattin-hook*, obſerving to draw every Laſhing of an equal ſtrength.

Then he begins to whip about theſe Laſhings to draw them cloſe together: He begins, I ſay, at at the bottom of the Laſhings, *viz.* cloſe above the *Plattin-*

Plattin-hook, and draws his whippings very tight and hard, and contiguous above one another, till he have whipt ſo near the top of the Laſhings, *viz.* near the *Hoſe-hooks* that he finds the Laſhings (which now ſpread wide aſunder becauſe the *Notches* of the *Hoſe-hooks* ſtands far aſunder) will yield no longer to to his whiping and pulling: So that now he faſtens his whip-cord with two or three hard knots, and cuts it from the Coyl.

In like manner he begins at the oppoſite diagonal corner of the *Plattin*, and laſhes and whips that: And alſo the two other corners of the *Plattin* as he did the firſt, carefully obſerving to draw all his laſhings and whippings of an equal ſtrength, leſt any corner of the *Plattin* either mount or dip.

If he finds he ſtrained the whip-cord not hard enough; or (when he is in his train of work) that the *Plattin-cords* with long working work looſe; or that the *Toe* of the *Spindle* and the *Nut* it works in, have worn one another; he by turning the *Screws* at the upper ends of the *Hoſe*, draws up the *Nut* of the *Plattin* cloſer to the *Toe* of the *Spindle*, and by conſequence ſtrains the *Plattin-cords* tighter up; which is alſo a great convenience in theſe new-faſhioned *Preſſes*: For, for any of theſe aforeſaid accidents the *Preſs-man* that works at our *Engliſh-Preſſes* muſt new *Hang* his *Plattin*: When (as aforeſaid) in theſe new *Preſſes* he only turns about a *Screw*.

¶ 5. *Of*

¶ 5. *Of* Juſtifying *the* Head.

Juſtifying the *Head* is to put into the Morteſſes in the *Cheeks* between the upper ſides of the Tennants of the *Head*, and the upper ſides of the Morteſſes in the *Cheeks*, an equal and convenient thickneſs of (either) ſquare pieces of Felt, Paſtboards, or Scaboards (ſome or all of them) that when the *Preſs-man Pulls*, the Tennants of the *Head* ſhall have an equal Horizontal level Check.

In *Juſtifying* the *Head*, the *Pull* is to be made *Longer* or *Shorter*.

If the *Preſs-man* be tall and ſtrong and his work be *Light*, that is, a ſmall *Form* and great *Letter*, which needs not ſo ſtrong a *Pull* as a Large *Form* and ſmall *Letter*, he covets to have a *Short-pull*; that is, that the *Spindle* ſhall give an *Impreſſion* by that time the *Bar* comes but about half way to the hither *Cheek* (in Printers Language *Down*.)

But if the *Preſs-man* be low, and not very ſtrong, he will require a *Longer Pull*, eſpecially if the work be *Heavy*, viz. a Large *Form* and ſmall *Letter*: Becauſe the heighth of the *Bar* is generally made to lye at the command of a reaſonable Tall man, and therefore a Low man cannot Pull the Handle of the *Bar* at ſo great a force at Arms-end as a Tall man; but will require the ſwinging of his whole Body backwards to add force to the *Pull*: So that if the *Pull* be not *Longer*, he cannot fall enough backwards to get the *Handle* of the *Bar* within his command and force. And therefore a Low man and *Heavy Work* requires a long and *Soaking Pull*.

A long or a *Soaking* or *Eaſie Pull*, is when the *Form* feels the force of the *Spindle* by degrees, till the *Bar* comes almoſt to the hither *Cheek* of the *Preſs*, and this is alſo call'd a *Soft Pull*; becauſe it comes Soft and Soakingly and eaſily down: And for the contrary reaſon the *Short Pull* is call'd an *Hard Pull*, becauſe it is ſuddenly perform'd.

That which makes a *Hard Pull*, is putting into the Morteſſes in the *Cheeks* ſolid Blocks of Wood, which will ſcarce Squeeze by the Strength of a *Pull*: And that which cauſes a *Soft Pull* is putting in pieces of Felt or Paſtboard (as aforeſaid) which being Soft will Squeeze and retain their Spring for a conſiderable time, yet will at length grow hard with Working, and then the *Pull* grows *Longer*; which the *Preſs-man* mends, by putting in another Felt or Paſtboard into each Morteſs.

The *Head* cannot be conveniently and well *Juſtifyed* ſoon after the laying of the *Stone*, if it be *Laid* on Bran, becauſe though the Force of the *Spindle* will at the immediate time of the *Pull* Squeeze the Bran in the *Coffin* cloſe, yet ſo ſoon as the force of the *Spindle* is off the Bran, all its dry parts, by their ſeveral irregular poſitions, will like ſo many Springs, at the ſame moment of time endeavour to recover their Natural tendency, and heaves the *Stone* upwards again: So that generally for a day or two Working the *Stone* will not lye Solid, though at length through the often and conſtant Squeezing the Bran it will. But if the *Stone* be *Laid* on Brown Paper, or Plaiſter of Paris, it quickly finds a Solid Foundation.

When the *Preſs-man Juſtifies* the *Head*, he unſcrews

ſcrews the *Female Screws* of the *Head Screws*, that the weight of the *Head* may draw it down, to make room to put the *Juſtifyers* into the Morteſſes in the *Cheeks*; and when he has put in ſo many as he thinks convenient, he *Screws* up the *Head* again as hard as he can. Then lays the *Cards* on the *Form*, on the *Preſs*, and *Runs in* the *Carriage* under the *Plattin*, and *Pulls* hard upon it, while his *Companion Screws* up the *Head* as hard and tight as he can, that the *Carriage*, *Tympan*, &c. may *Run* the freelier under the *Plattin*.

¶ 6. *Of* Oyling *the Iron Work of the* Preſs.

The *Ribs*, the *Tympan Joynts*, the *Friſket Joynts*, the *Garters*, both ends of the *Rounce-Spindle*, the *Nut* and *Spindle*, and the *Toe* of the *Spindle*, are all to be well Oyl'd; that they may all perform their ſeveral offices the eaſier, lightlier and nimbler; both *Upper* and *Under hand*.

All but the *Nut* and *Spindle*, and *Toe* of the *Spindle*, are Oyl'd with a Feather dipt in a ſpoonful, or little Pot, or Oyſter-ſhell, *&c.* of Sallad Oyl; and that feather dabb'd upon ſo much of the *Ribs* as he can come at, at either end of the *Preſs*: For then by *Running* the *Carriage* three or four times quick *Out* and *In*, it deſperſes the Oyl equally the whole length of the *Ribs*, and at the ſame time Oyls the *Cramp-Irons*.

And for Oyling the *Joynts*, he commonly takes out the *Pins* and Oyls them, and puts them in again; and with the edge of a Feather dabs a little

little Oyl between the Crevices of the *Joynts*.

He thruſts the Feather in between the *Spindle* of the *Rounce* and its *Collers*.

To Oyl the *Nut* and *Spindle*, he pours a good quantity of Oyl in at the *Hole* in the *Head*, and with a Cork ſtops the hole again to keep out duſt and filth: Then drawing the *Bar* quick to and fro about half a ſcore times, he works the Oyl equally about the *Nut* and *Spindle*.

To Oyl the *Toe* of the *Spindle*, he pours about a Spoonful of Oyl into the *Plattin-pan*.

¶ 7. *Of* Making Regiſter, *and* Making Ready *a* Form.

A curious *Preſs-man* will take care that againſt the *Compoſiter* brings a *Form* to the *Preſs* his *Preſs-ſtone* be wip'd very clean; for if any (though ſmall) hard extuberant matter lye on it, the *Letter* that lyes on that extuberant matter will, with *Pulling*, quickly *Riſe*, and not only Print harder than the reſt of the *Form*, but bear the force of the *Plattin* off of the *Letters* adjacent to it. And therefore many times a *Preſs-man* will receive the *Form* from the *Compoſiter* when he has only Set the *Form* on the ſide of its *Chaſe* upon the *Preſs-ſtone*, that he may be the Surer the *Face* of the *Stone* is clean when he layes the *Form* down; as alſo that he may carefully examine that the backſide of the *Form* is clean before he goes about to make *Regiſter*, or otherwiſe make ready his *Form*.

Making Regiſter is to *Quoin* up a *Form* and otherwiſe alter *Whites* (if need be) between the *Croſſes* and *Pages*: So as that when a ſecond *Form* of the ſame

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Volumne, *Meaſure* and *Whites*, is plac'd in the ſame poſition, all the Sides of each *Page* ſhall fall exactly upon all the Sides of the *Pages* of the firſt *Form*.

The firſt proceſs a *Preſs-man* makes towards this Operation, is the chuſing and placing of his *Points*: For to large Paper he chuſes *Short Shanked Points*, and to ſmall Paper *Long Shanked Points*, and proportionable to intermediate ſizes of Paper: For his *Points* ought to be placed ſo as that when he is in his Train of work, they prick the *Point-holes* within the graſp of the hollow between his hand, Thumb, and Fore-finger; becauſe when he ſhall Work the *Reteration* he may the better manage and Command the ſheet he lays on the *Tympan* and *Points*.

Nor will he place his *Points* too near the edge of the *Paper*, becauſe when he Works the *Reteration*, he would be forc'd to carry his furthermoſt *Point-hole* the further from him, which in a long train of Work loſes Time: For the *Laying Sheets* quickly on their *Point-holes* adds much to riddance. So alſo the leſs diſtance between the further and hither *Point-hole* makes more riddance than if they are far diſtant; becauſe he muſt draw his Body ſo much the further back to place that *Hole* on its *Point*. Therefore he places the hither *Point* farther into the Paper than the farther *Point*, if it be *Folio*, *Quarto* or *Octavo*, but to *Twelves* equally diſtant from both edges of the Paper.

By placing the *Points* unequally from the edges of the Paper, as in *Folio's*, *Quarto's* and *Octavo's* (as aforeſaid) he alſo ſecures himſelf the more from a *Turn'd Heap* when he works the *Reteration*; becauſe

cauſe without very much altering the *Quoins*, he ſhall not be able to make *Regiſter*: And *Preſs-men* (eſpecially if they Work upon the ſame ſort of Work) ſeldom or never remove the *Quoins* on the further ſide the *Carriage*, nor on the right hand end of the *Carriage*, but let them lye as gages for the next *Form*: For thruſting the *Chaſe* cloſe againſt theſe *Quoins*, the *Regiſter* is almoſt (if not quite) made: The *Compoſiter* having before, according to his Task, choſen the *Chaſes* exactly of an equal ſize, and made ſtrait and equal *Whites* between the *Croſſes*, &c.

Having choſen his *Points*, he places them ſo that they may both ſtand in a ſtraight line parallel with the top and bottom ſides of the *Tympan*; which to know, he ſtrains a Packthred croſs the whole *Tympan*, laying it at once upon the middle of the *Heads* of both the *Point-Screws*, (for we will ſuppoſe the Joyner hath made the Morteſſes into which the *Point Screws* are Let, parrallel with both the ends of the *Tympan*) then if both the *Points* ſtand in that ſtraight line they are parrallel, if not, he moves one or both of them upwards or downwards till they do, and then *Screws* them faſt.

Then he layes the *Tympan* down upon the *Form*, holding the *Friſket-end* of it in his Left-hand, about an Inch or an Inch and a half above the *Face* of the *Letter*, and Sinks his Body downwards till he can ſee between the *Form* and *Tympan*, and with the Ball of the middle finger of his Right-hand preſſes a little gently upon the *Tympan* juſt over the *Point-ends* of each *Point* ſucceſſively, to ſee if the *Points* fall in or near the middle of the *Slits* in the

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Short-Croſs. If they fall exactly in the middle of thoſe *Slits*, the *Form* lyes right between the middle of both the ends: If they fall not exactly in the middle of both theſe *Slits*, he moves the *Form* between the ends of the *Carriage*, till they do, and then *Quoins* up the two ends of the *Chaſe*.

Then laying the *Tympan* flat down upon the *Form*, he layes the *Blankets* in it: (They are call'd the *Blankets* though generally it is but one *Blanket* doubled:) Then he puts the *Iron-Pins*, faſtned through the hither ſide of the Inner *Tympan* into the Holes made through the hither ſide of the outer *Tympan* for Gages: And turning about the Tongues of the *Iron-Buttons*, that are fitted into the outer Side of the outer *Tympan* over the upper Side of the *Inner-Tympan*, he *Screws* the *Button* faſt down. He alſo *Screws* down the *Iron-Button* at the end of the *Tympan*. Theſe *Buttons* thus Screwed down are to keep the *Inner-Tympan* faſt in, that it Spring not upwards.

Then he Folds a ſheet of the Paper he is to Work long-ways, and broad-ways, and lays the long Creaſe of it upon the middle of the *Long-Croſs*; and the Short Creaſe over the middle of the *Gutters* of the *Short-Croſs*, if the *Short-Croſs* lye in the middle of the *Form*, (for in *Twelves* it does not, but then he gueſſes at the middle;) then wetting his *Tympan* (as ſhall in proper place be ſhewed) he turns it down upon the Paper, and *Running in* the *Carriage*, *Pulls* that Sheet, which with the force of the *Pull* now the *Tympan* is wet, will ſtick to the *Tympan*; and turning up the *Tympan* again ſees how well the Sheet was laid; that is, how even it was Laid: For

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if it was laid even on the *Form*, the *Margin* about the out ſides of all the outer *Pages* will be equal; But if the Sheet be not laid even, he lifts it up Side by Side till he have looſen'd it from the *Tympan*, and removes it by his diſcretion till it be laid even: And then *Pulls* again upon it to faſten it to the *Tympan*. This Sheet is call'd the *Tympan-ſheet*.

Then he lays another Sheet even upon the *Tympan-ſheet*, for a Regiſter Sheet, and a Waſte Sheet over that to keep it clean from any filth the *Face* of the *Letter* may have contracted and imprint upon it, and *Pulls* theſe two Sheets. Then he *Runs out* the *Carriage*, and takes up the *Tympan*, and takes off the two Sheets, laying the waſte Sheet by: But turns the other Side of the *Regiſter-Sheet* the proper way his Volumne requires, *viz.* end-ways if it be *Octavo* or *Folio*; or Side-ways if *Twelves* or *Quarto*, *&c.* as at large you ſee in the Section of *Impoſing*. And laying the *Point-holes* in the *Regiſter-Sheet* over the *Points*, lays his waſte Sheet on again, *Runs-in* the *Carriage*, and *Pulls* upon that the Second ſide of the *Regiſter-ſheet*, to try how well the Impreſſion of the Sides of all the *Pages* agree, and lye upon the Impreſſion in the firſt *Pull'd* Side. If he finds they agree perfectly well, *Regiſter* is made. But if the Impreſſion of the laſt *Pull'd* Side of the *Regiſter-ſheet* ſtand be-hither the Impreſſion of the firſt *Pull'd* ſide, either the whole length of the Sheet or part, he obſerves how much it ſtands be-hither: If the thickneſs of a *Scaboard*, a *Nomparell*, a *Long-Primmer*, &c. he looſens the *Quoin* or *Quoins* on the farther ſide of the *Carriage*, and opens one or both of them, *viz.* removes

moves them backwards till they ſtand a *Scaboard*, a *Nomparell*, a *Long Primmer*, &c. off the ſides of their reſpective Corners: Then *Knocks* up one or both the oppoſite *Quoins*, till he have removed the *Chaſe*, and the *Chaſe* by conſequence has forc'd the opened *Quoin* or *Quoins* cloſe againſt their Corners. Or if the Impreſſion of the laſt *Pulled Side*, ſtands within the Impreſſion of the firſt *Pulled Side*; he obſerves how much alſo; and Looſning the hither *Quoin* or *Quoins*, and *Knocking up* the oppoſite as before, makes *Regiſter*, for the Sides of the Sheet.

Then he obſerves how the *Regiſter* of the *Head* and *Foot* agrees. And if he finds it agrees on both ſides the *Short Croſs*, he has good *Regiſter*; ſuppoſing the *Compoſiter* has performed his Office, *viz.* made all his *Pages* of an equal Length, &c.

If the Impreſſion of the Laſt *Pulled Sheet*, lye without the Impreſſion of the firſt *Pulled Sheet*, towards the upper or lower end of the *Tympan*, he opens the *Quoins* at the reſpective end, and *Knocks-up* the oppoſite till he have made *Regiſter*: Which to try he *Pulls* another clean *Regiſter-ſheet* as before. And if he finds *Regiſter* agree on all the Sides of the *Form* the Task is performed: If not, he mends as aforeſaid till it do.

But it ſometimes happens that the *Compoſiter* has not made an exact equal *White* between all the ſides of the *Croſſes*: In this caſe, altering the *Quoins* will not make good *Regiſter*; wherefore the *Preſs-man* obſerves which ſide has too much or too little *White*; and unlocking the *Form* takes out or puts in ſuch a number of *Scaboards* as he thinks will make good

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Regiſter: which he tryes by *Pulling* a Sheet, and if need be, mending as before, till he have *Pull'd* a Sheet with good *Regiſter*.

Although the *Preſs-man* have made *Regiſter*, yet he muſt further *Make Ready* the *Form* before he can go to Work upon it. Under this phraſe of *Making Ready the Form* is comprehended many Conſiderations, leading to ſeveral various Operations; For firſt, The *Friſket* muſt be *Cut*: which to perform, the *Preſs-man* fits the *Match-Joynts* of the *Friſket* into the *Match-Joynts* of the *Tympan*, and pins them in with the *Friſket-pins*: And having *Beaten* the *Form*, turns down the *Friſket* and *Tympan* on the *Form*. And having alſo Rubbed the *Blankets* to ſoften them, lays them ſmooth and even in the *Outer-Tympan*, and *Pins* the *Inner Tympan* in upon them, as was ſhewed in the beginning of this ¶, and *Pulls* as before, and as ſhall farther be ſhewed in ¶ 15. upon the bare *Friſket*.

Then he *Runs out* the *Carriage*, and takes up the *Tympan* and *Friſket* together off the *Form* and lays them on the *Gallows*; Then takes the *Friſket-pins* out again, and takes off the *Friſket*: And laying it flat on a *Paper-board*, with the point of a Pen-knife cuts through the *Friſket* about all the Sides of each *Page*, allowing to each *Page* he thus cuts out of the *Friket* about a *Nomparil Margin* on all the ſides of the cut cut *Pages*: Then he puts and pins his *Friſket* again on the *Tympan*, as before.

2*dly*, He takes care that the *Tympan* be well *Wet*; which he does by ſqueezing Water out of a *Spunge* on the backſide of it, till it be well Wet all over, and well ſoak'd and limber. 3*dly*,

3*dly*, That the *Form* be well and faſt *Lock'd up*.

4*thly*, That no *Letters* or *Spaces* lye in the *White-lines* of the *Form*; which may happen if the *Compoſiter* have *Corrected* any thing ſince the *Form* was laid on the *Preſs*, and the *Compoſiter* through overſight pickt them not all up.

5*thly*, If any *Wooden Letters* or other *Cuts* be in the *Form*, that they be exactly *Letter-high*: If not, (for it ſeldom happens they are) he muſt make them ſo; If they are too *Low*, (as they generally be) he *Under-lays* them: But firſt He examines how much they are too *Low*, by laying one Card or one Scaboard or two Scaboards, or a Scaboard and a Card, *&c.* upon the Face of the *Wooden Cut*, and gently feeling with the Balls of the Fingers of his right Hand if the intended *Under-lay*, viz. the Scaboard, Card, *&c.* lye exactly even with the *Face* of the *Letter*, If it do not, he tries thicker or thinner *Under-lays* till he have evened the *Under-lay* with the *Face* of the *Letter*: For then the Balls of his Fingers will go ſmoothly and equally over the *Under-lay* and the *Face* of the *Letter*, as if they were one and the ſame Superficies.

Having evened his *Under-lay*, he *Unlocks* that *Quarter* it is in, and takes the *Wooden Cut* out of the *Form*, and cutting a Scaboard or Card or what it wants a little ſmaller than the bottom of his *Wooden Cut*, he lays it into the place he took the *Wooden Cut* out of, or elſe he Paſts the *Under-lay* on the bottom of the *Wooden Cut*, and puts the *Wooden Cut* into its place again upon the *Under-lay*. But yet he truſts not to his Judgment altogether for the thick-

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neſs of the *Underlay*: But *Locking up* the *Form* again, *Pulls* the *Cards* upon it to ſink it as low as it will go, and *Beats* and *Pulls* a Sheet to ſee how it pleaſes him. If it be too low, which he finds by the Pale Printing of it, he *Underlays* it a little more, and again trys by Printing till it pleaſes him. But by no means he lets the *Cut* ſtand too high, though but a ſmall matter, For then it will Print too *Hard* and too *Black*, and deface the beauty and fairneſs of the *Cut*; So that it may better ſtand about half a Card too low, than in the leaſt too high.

If the *Wooden Cut* be too high, he cauſes a Joyner to Plain off ſome at the bottom.

6*thly*, If a *White Page* or *Pages* happen in a *Form*, and he uſes a *New-drawn Friſket*, then he does not *Cut out* that *Page*: But if he Work with an *Old Friſket*, and that *Page* is already *Cut out*, he Sews, or ſometimes Paſtes on a Scaboard, if the *Page* be not too broad, or a ſtrong Paſteboard to the *Sides* and *Croſſes*, to cover the *White-page* in the *Form*, that it Print not Black.

If the ſides of the *Pages* adjacent to the *White-page* Print *Hard*, as moſt commonly they do, becauſe the *White-page* is generally lower than *Letter* high, ſo that the force of the *Spindle* ſqueezes the yielding *Paper*, *Tympan* and *Blankets* below the Plain of the *Face* of the *Letter*; and beſides the force of the *Spindle* falling upon the center of the *Plattin*, and the Plain of the *Plattin* not finding reſiſtance to entertain it equally, preſſes lower down upon the low *White-page*, than upon the *Face* of the *Letter*; ſo that the *Preſs-man* either *Underlays* the *White-page*,

page, as he does *Wooden Cuts*, or elſe he fits a *Bearer* on the *Frisket*.

The *Bearer* is a *Riglet* of a convenient thickneſs: and this convenient thickneſs the *Preſs-man* finds as I ſhewed you how he found the thickneſs of his *Underlays* for *Wooden Cuts*; only with this difference, that as then he made his *Wooden Cut* exactly *Letter-high*, ſo now he maks his *Bearer* and the *Furniture* his *Bearer* bears on *Letter-high*: Wherefore he Paſts one ſide of his *Bearer*, and lays it as he would have it on the *Furniture*, with the Paſted ſide upwards; and laying his *Tympan* and *Frisket* down upon the *Form*, with his Fingers preſſes on the outſide the *Inner-Tympan Frisket* and all, upon the place where the *Beares* lies; So that with the Paſte the *Bearer* ſticks to the ſide of the *Frisket*, which he takes up again: and if he thinks the Paſte not ſtrong enough to hold it till the *Form* is wrought off, he ſews it to the *Frisket* by pricking his Needle on both ſides the *Bearer*, and laſhing the Thred over it ſo often till he thinks it faſt enough ſew'd on.

7*thly*, He examines whether the *Frisket Bites* not: That is, whether no part of it Print upon any of the ſides of any of the *Pages*: if they do he cuts away ſo much and about a *Nomparel* more off the *Frisket* where it *Bites*.

8*thly*. He examines if the *Beards* of the *Letter* Print at the Feet of the *Pages*: If they do, He conſiders whether the too ſhort or too far *Running* in of the *Carriage* cauſes it. Or whether it be only the *Beard* of a ſhort *Page* that Prints; If it be the *Beard* of a ſhort *Page* that Prints, he remedies it with an *Under-*

Under-lay as I ſhewed he did in the *White Page.*

If the *Carriage* be *Run* in too ſhort, and the *Feet* of the *Pages* ſtand towards the *Plattin*, the *Hind-ſide* of the *Plattin* will preſs ſtrong upon the *Feet* of thoſe *Pages*: And if the *Carriage* be *Run* in too far, the *Feet* of the *Pages* that ſtand towards the hinder *Rail* of the *Tympan* will moſt feell the force of *Plattin*, and according to a greater or leſs proportion of that force, and to the ſoftneſs or yielding of the *Paper*, *Tympan*, and *Blankets*, and all other *Springs* in the *Preſs*, mentioned in §. 11. ¶ 1. of this *Volumne*, the *Feet* of the *Pages* and *Beard* of the *Letter* will more or leſs Print *Hard.*

Wherefore in this caſe he *Runs* the *Carriage* under the *Plattin*, till the farther Edge of the *Plattin* juſt cover the *Feet* of thoſe *Pages*, and with a piece of Chalk makes a White ſtroke over the *Board* of the hither ſide of the *Carriage* behind, and the upper ſide of the *Rail* of the *Ribs*: Then he *Runs* in the *Carriage* again, till the Foreſide of the *Plattin* juſt cover the *Feet* of the *Pages* next the *Hind Rail* of the *Tympan*, and makes another mark with Chalk on the *Rail* of the *Ribs* to joyn with the mark he firſt made on the *Board* of the *Carriage.* Then he *Runs* out the *Carriage*, and lays the *Tympan* down on the *Form*; and *Runs* in the *Carriage* again till he joyn the mark or line he made firſt on the *Carriage-board* and *Rail* of the *Ribs*, and makes a mark with Chalk on the farther *Rail* of the *Tympan* juſt range with the Fore-ſide of the *Plattin.* This mark on the *Tympan* ſhews him how far he muſt *Run* the *Carriage* in againſt the Fore-edge of the *Plattin* for the *Firſt Pull.* Then he

Runs

Runs in the *Carriage* farther, till he joyn the ſame Mark or Line on the *Carriage-board* to the ſecond Mark he made on the *Rail* of the *Ribs*, and makes another Mark on the further *Rail* of the *Tympan* juſt range with the Fore-ſide of the *Plattin*, for the Mark he is no *Run* the *Carriage* in to againſt the Fore-edge of the *Plattin*, for his *Second Pull.*

9thly, He Examines if the *Catch* of the *Bar* will hold the *Bar* when the *Spindle* makes a ſmall Spring, *viz.* When the *Bar* flies but a little way back from the preſſure of the *Form*: If it will not, he knocks up the *Catch* a little higher till it will, and then Screws the *Screw* on the *Shank*, and conſequently the *Catch* cloſe and firm againſt the *Cheek* of the *Preſs.*

But if the *Catch* ſtand too high, ſo that it will not without a great Spring, (*viz.* when the *Bar* is *Pull'd* hard from the farther *Cheek*) fly up; He then knocks upon the top of the *Catch* to ſink it lower; And when it is well fitted Screws it up again, as before.

If the *Catch* of the *Bar* ſtand too Low, it will not hold the *Bar*; But it will *Come down* again of it ſelf when he is in his train of Work: For if, as it often happens, he lets the *Bar* fly harder than ordinary back, or if it ſlip out of his Hand, it will knock hard againſt the *Cheek*, and Spring back again.

If the *Catch* of the *Bar* ſtand but a little too High, the Violence of the *Bars* flying back to make it ſtick on the *Catch* will ſoon Looſen the Square of the *Bar* in the *Eye* of the *Spindle*; and indeed ſubject the whole *Preſs* to an unſtable condition.

This is another eaſe and convenience theſe New-faſhioned *Preſſes* gives the *Preſs-man*: For in the Old

make

make of the *Preſs*, when the *Catch* of the *Bar* holds too hard, or too ſoft, he is troubled to Raiſe or Sink the *Catch* with the thickneſs of *Scaboards*, which being indeviſable, does not without trouble or luck juſten it to an exact Heighth. And beſides, Theſe *Under-lays* being but put under the *Catch* upon the *Wooden Bearer* without any Faſtning, are very ſubject to work out by the conſtant diſturbance the motion of the ſeveral Parts of the *Preſs* (when at work) gives it: Or elſe (which is worſe) he many times is forced to batter the *Cheek* of the *Preſs*, with drawing and driving of Nails out and in it, to fit on another *Catch* bigger or leſſer, whereas here with a ſofter or an harder knock of the Hammer (as aforeſaid) he Raiſes or Sinks the *Catch*, and afterwards Screws it firmly up.

10*thly*, He conſiders whether the *Stay* of the *Friſket* ſtands neither too forwards or too backwards. The *Stay* may ſtand too forwards, though when it is leiſurely turn'd up it ſtays the *Friſket*: Becauſe, when the *Preſs-man* is in a Train of Work, though he generally throws the *Friſket* quick up with an accuſtomed, and as he intends, equal ſtrength; yet if his gueſs at ſtrength in throwing it up varies, and it comes (though but a little) harder up, the *Batten* faſtned on the *Cap*, and the Perpendicular *Batten* faſtned to the aforeſaid *Batten* (as is deſcribed in §. 11. ¶ 21. of this Volumne) will by their ſhaking cauſe a Spring, which will throw the *Friſket* back again upon the *Tympan*: Nay, though (as ſometimes it happens) a ſolid Wall ſerves to do the Office of a *Stay* for the *Friſket*; yet with a little too hard throwing it up, the

the *Frisket* it ſelf will ſo ſhake and tremble (its Frame being made of thin Iron) from end to end, that e're it recover reſt, its own Motion will by the quick running of a Spring through it beat it back again.

If the *Stay* ſtand too backward, then after he has given the *Frisket* a Touch to bring it down, it will be too long e're it come down, and ſo hinder his Riddance.

Therefore he places the *Stay* ſo, that the *Frisket* may ſtand but a little beyond a Perpendicular backwards, that with a near-gueſs'd ſtrength in the toſſing it up it may juſt Stand, and not come back; For then with a ſmall Touch behind, it will again quickly come down upon the *Tympan*.

11*thly*, He conſiders the Scituation of the *Foot-ſtep*, and that he places ſo as may beſt ſuit with his own Stature; For a Tall man may allow the *Foot-ſtep* to ſtand farther off and lower than a Short, becauſe his Legs reach farther under the *Carriage*, and can tread hard to add ſtrength to his *Pull*; when a Short man muſt ſtrain his Legs to feel the *Foot-ſtep*, and conſequently diminiſh the force of his *Pull*.

12*thly*, He fits the *Gallows*, ſo that the *Tympan* may ſtand as much towards an upright as he can: Becauſe it is the ſooner clapt down upon the *Form* and lifted up again. But yet he will not place it ſo upright, but that the White Sheets of Paper he lays on it may lye ſecurely from ſliding downwards: And for *Reteration* Sheets their lying upon the *Points* ſecures them.

In theſe New-faſhioned *Preſſes* there is no trouble to place the *Gallows*, ſo as it may mount the *Tympan* to

to any Poſition: For ſliding the *Male-duftails* made on the *Feet* of the *Gallows* through the *Female Duftails* faſtned on the *Planck* of the *Carriage*, performs this great trouble that in our Engliſh *Preſſes* requires Unnailing the Studs of the *Gallows* and Nailing them again; and many times tearing them and the *Carriage-Planck* to pieces: And that ſo oft as the fancy of the *Preſs-man* alters, or another Work-man comes to Work at that *Preſs*.

13*thly*, Few *Preſs-men* will Set the range of the *Paper Bench* to ſtand at right angles with the *Plank* of the *Carriage*: But draws the farther end of the *Paper Bench* ſo as the hither ſide may make an Angle of about 75 Degrees (more or leſs) with the hither ſide of the *Carriage*: The reaſon is, if the hither ſide of the *Paper Bench* ſtand at right Angles with the hither ſide of the *Carriage*, he muſt carry his Hand farther when he *Lays out Sheets* which would hinder riddance: Beſides his *Companion* has a nearer acceſs to it, to look over the *Heap*; which he frequently does, to ſee the conſtant Complexion of the Work.

14*thly*, The *Preſs-man* brings his *Heap* and Sets it on the hither end of the *Paper Bench* as near the *Tympan* as he can, yet not to touch it, leſt it ſtop the *Tympan* in a train of Work: and he places an end of the *Heap* towards him. Then taking off the *Paper-board* that cover'd it when it was Preſt, he lays the long ſides of it parallel to the ſides of the *Paper Bench*: Then he takes the uppermoſt Sheet (which as you may Remember is a Waſte-ſheet) and lays it on the empty *Paper-board*; And taking Three or Four or Five Quires off his *Heap* in both his Hands, he

he lifts it a pretty height above his Head, and claps it as hard as he can down upon the reſt of the *Heap*, to looſen the Sheets that with Preſſing ſtick cloſe together: And not thinking them yet looſe enough, he thruſts them long-ways and ſide-ways, heaving and huffing them till he think he has pretty well looſen'd or hollow'd that quantity of Paper.

Then with the nail of his Right Hand Thumb, ſloaping from his Thumbward, he draws or ſlides forwards the upper Sheet, and two or three more commonly follows gradually with it, over the hither edge the *Heap*, to prepare thoſe Sheets ready for him to ſnatch off the *Heap*.

15*thly*, He conſiders if the *Face* of the *Tympan* be moiſt enough, for a *Tympan-ſheet* to ſtick to, for though he Wet the back-ſide of it before to ſupple it, yet if the *Tympan* be ſtrong, the Water will not ſoak quite through to moiſten the *Face*, So that he wets the Spunge in fair Water, and beſprinkles the upper ſide or *Face* of the *Tympan* all over: And ſqueezing the Water that is left in the Spunge well out again, rubs it quickly and gently all over the *Face* of the *Tympan*, to drink up or lick off the body of Water that he beſprinkles on, and only leaves moiſture on the *Face* of the *Tympan* to hold the Sheet.

Here accrews now a benefit by the make of theſe New-faſhioned *Preſſes* to the Maſter *Printer*: For theſe *Preſſes* having a *Gutter* faſtned to the *Hind-rail* of the *Carriage* (as was deſcribed in § 10. ¶ 9. of this Volumne) to receive the Water that falls from the *Tympan*, and to convey it beyond the farther ſide of the *Preſs*, ſecures the *Blank* of the *Carriage* from

from Wet and moiſture, and conſequently from that cauſe of Rotting.

Then he takes a Sheet of Paper off the *Heap* for a *Tympan-ſheet*, and Folds it exactly into four quarters, and lays the Creaſes of the Sheet exactly upon the middle of the *Short* and *Long Croſſes*, if the Volumn of the *Form* allows them both to be in their reſpective middles of the *Chaſe*; if not, he lays the Creaſes exactly againſt the Notches in the *Chaſe* that are made for them reſpectively: And if his *Friſket* be Blackt with former Work, he lays a Sheet of Waſte-Paper upon the Creaſt-ſheet: Then lays the *Tympan* down on the *Form*, and *Pulls* on theſe two Sheets, and takes up his *Tympan* again, and lays by the Waſte-Sheet; but the Creaſt-Sheet he lays on the *Tympan*. But firſt preſſes the *Tympan* downwards, from under the Shank of each *Point* ſucceſſively, puts the two oppoſite ſides of the Sheet under the *Shancks* of the *Points*, and the *Holes* the *Points* prickt with *Pulling* exactly under the bottom Revits of the *Points*: Then taking a little Paſte on the Ball of one of his fingers, a little beſmears the under corners of that Sheet, and claps them down cloſe on the *Tympan*, that the Sheet may ſtick: But the bottom corner of that ſide the Sheet that is next to him, he beſmears within the Matter of the Sheet, *viz.* within the Impreſſion the *Form* made. For when he has faſtned that corner down, he tears off the *Margin*, (by gueſs) in a ſtraight line athwart the very corner, that it may not lye in his way to catch at as he *Takes off Sheets*, when he is in his train of Work.

This Sheet is called the *Tympan-ſheet*; and is only

as

as a ſtanding mark to lay all the other Sheets exactly even upon, while he Works upon *White-paper*.

The *Preſs-man* does now ſuppoſe he has *Made Ready*: Yet for aſſurance he will try his *Regiſter* once more, leſt ſome of the *Quoins* ſhould have ſlipt. How he made *Regiſter* I ſhewed you before, wherefore if his *Regiſter* be not good, he mends it as I there ſhewed. But we will ſuppoſe it now good, wherefore he gently *Knocks* up all the *Quoins* in the corners, with an equal force to faſten them.

Though I have in Numerical order ſet down theſe Operations, Circumſtances and Conſiderations in this ¶: yet does not the *Preſs-man* oblige himſelf to obſerve them in this or any other orderly ſucceſſion: Becauſe it often happens that ſome of theſe Operations may more readily be performed out of this or any other preſcribed Order.

¶ 8. *Of* Drawing *the* Tympans *and* Frisket.

Drawing the *Tympans* or *Frisket* is the Covering and Paſting on of Vellom, Forrels or Parchment upon the *Frames*. To each *Tympan* and *Frisket* is choſe a Skin large enough to cover and lap about the Frames.

Theſe Skins the *Preſs-man* rumples up together, and puts them into a Pail of fair Water to ſoak; and if he thinks they do not ſoak faſt enough, he takes them and rubs them between his Hands, as Women waſh Cloaths, to ſupple them, that the Water may Soak the faſter in. And being throughly Soakt he wrings the Water as well out as he can.

Then the Boy having provided a Bruſh and about

a

a Pint of Paſte, made of fine Wheaten Flower, well boiled in fair Water to the conſiſtency of Haſty-pudding, he ſpreads the Skin flat upon a Table; and firſt Paſtes the under Side of the *Tympan*; then lays it on the middle of the Skin, and rearing each ſide ſucceſſively up, Paſtes the Skin alſo from the inſides the *Tympan* to the outer edges of the Skin, and lays the *Tympan* down flat again: Then he Paſtes all the other ſides of the *Tympan*, and wraps the Skin about the two long Sides firſt, Cutting the Sides of the Skin away ſo much, till he leaves only enough to reach almoſt quite through the under-ſides of the *Tympan* again: Then drawing and ſtraining the Skin tighter, he drives in the points of two-penny or three-penny Nails about ſix Inches diſtant from one another, to keep the Skin from ſtarting as it Dries.

Having thus Drawn the ſides, he with the Point of a Pen-knife cuts ſquare holes in the Skin, juſt where the *Iron-Joynts* fall, for the Joynts to fall into, and Draws and Strains the ends of the *Tympan* as he did the Sides; wrapping the ends of the Skin under the under-ſides of the *Tympan*, and where Wood is, drives in the points of Nails, as before.

Then ſetting it by to dry; when it is dry, he draws the Nails.

As he Drew this *Tympan*, ſo he Draws the other: and the *Friſket* alſo: only, becauſe he cannot drive in Nails, (the *Friſket* being all made of Iron) he doubles the Skin over the ſides of the *Friſket*, and being well Paſted, as aforeſaid; he Sews the ſides that Lap over down upon the whole Skin, to keep it from ſtarting while it drys: And he Paſtes a Sheet

or

Plate 29.

or two Thick of Paper all over the inſide of it; as well to ſtrengthen as to thicken it.

¶ 9. *Of Wetting Paper.*

Paper is commonly *Wet* in a Tray full of fair Water. The *Preſs-man* places the length of the Tray before him; his dry *Heap* on the Left Hand the Tray, and a *Paper-Board* with its Breadth before him on his Right Hand of the Tray: He lays firſt a Waſte Sheet of Paper on the *Paper-board*, leſt the Board might Soyl or foul the firſt Sheet of the *Heap*. Then he takes up the firſt *Token*, and lays it in ſuch a poſition that the backs of the Quires lye towards his Right Hand, that he may the readier catch at the Back of each Quire with his Right Hand, when he is to *Wet* it: And he lays that *Token* athwart, or ſomewhat Croſſing the reſt of the *Heap*, that he may the eaſier know when he has *Wet* that *Token*.

Then taking the firſt Quire of the *Heap* with the back of it in his Right Hand, and edge of the Quire in his Left, he lays the Quire down upon the Waſte Sheet, ſo, as that the back of the Quire lye upon the middle creaſe of the Waſte Sheet, and conſequently one half of the Quire already laid even down upon one half of the Waſte Sheet. If the Paper be Strong, he opens about half the Quire, and turns it over dry upon the other half of the Waſte Sheet: But if the Paper be Weak and Spungy, he opens the whole Quire, and lays that down Dry.

The reaſon why he lays the firſt Laying-down Dry, is, becauſe it lying under the reſt of the *Heap* will

will ſufficiently imbibe the moiſture that Soaks from it: And the reaſon why he leaves but half a Quire Dry for ſtrong Paper, and an whole for Spungy, is, Becauſe Spungy Paper Soaks in moiſture faſter than Strong.

Having laid down his Dry Laying, he takes another Quire off the Dry *Heap*, with the back of the Quire in his Right Hand, and the edge of the Quire in his Left, (as before,) and cloſing his Hand a little, that the Quire may bow a little downwards between his Hands, he Dips the back of the Quire into his Left Hand ſide of the Tray of Water: And diſcharging his Left Hand of the Quire, Draws the Quire through the Water with his Right; but as the Quire comes out at the Right Hand ſide of the Tray, he nimbly catches the edge of the Quire again in his Left Hand, and brings it to the *Heap*, but by lifting up his Left Hand bears the under ſide of the Quire off the Dry Paper, laid down before, leſt the Dry Sheet ſhould ſtick to the Wet, before he have plac'd the Quire in an even poſition, and ſo perhaps wrinkles a Sheet or two, or elſe put a Dry Sheet or two out of their even poſition, on the ſides or ends.

But this Drawing the Quire through the Water he performs either nimbly or ſlowly: If the Paper be Weak and Spungy, he performs it quickly; if Strong and Stubborn, ſlowly.

To place this Quire in an even poſition, he lays the back of the Quire exactly upon the opening creaſe of the former Quire, and then lets the ſide of the Quire in his Left Hand fall flat down upon the *Heap*; and diſcharging his Right Hand, brings it to the

the edge of the Quire; and with the aſſiſtance of his Left Hand Thumb (ſtill in its firſt poſition) opens or divides either a third or half of the whole Quire, according to the quality of the Paper, (as was ſaid before,) and ſpreading the Fingers of his Right Hand as much as he can through the length of the Quire, turns over his opened diviſion of the Quire upon his Right Hand ſide of the *Heap*.

The reaſon why he ſpreads the Fingers of his Right Hand as much as he can through the Length of the Quire; is, becauſe the outſide Half Sheet is Wet, and conſequently quickly Limber, ſo that if the Paper be Weak, it would fall Down before the reſt of his Opening, and double into wrinkles, which thus ſpreading his Fingers prevents.

In the ſame manner he Wets all the Quires of his Dry *Heap*. *See Plate* 29.

But having Wet his firſt *Token*, he doubles down a great corner of the upper Sheet of it on his Right Hand, ſo as the farther corner may lye a little towards the Left Hand of the creaſe in the middle of the *Heap*, and ſo as the hither corner may Hang out on the hither ſide of the *Heap* about an Inch and an half: This Sheet is called the *Token-Sheet*, as being a mark for the *Preſs-man* when he is at Work to know how many *Tokens* of that *Heap* is *Wrought-off*, and conſequently to know how many is to Work.

When he has Wet the firſt *Token*, he removes the next uppermoſt Dry *Token* askew on the Dry *Heap*, and ſucceſſively all the reſt, as I ſhewed in the beginning of this ¶.

Having Wet the whole *Heap*, he lays a Waſte Sheet

Sheet of Paper upon it, that the *Paper-Board* to be laid on, Soyl not the laſt Sheet of the *Heap*: Then three or four times takes up as much Water as he can in the hollow of his Hand, and throws and ſprinkles it all over the Waſte-ſheet that it may moiſten and Soak downwards into the un-wet upper part of the laſt Diviſion of the Quire.

The Paper being thus Wet, he takes up the whole *Heap* upon the *Paper-board*, and ſets it by in a convenient place of the Room, and lays another *Paper-board* upon it: And upon the middle of the *Paper-board*, ſets about Half an Hundred Weight, and lets it ſtand by to preſs, commonly till next Morning: For *Preſs-men* generally Wet their Paper after they have left Work at Night.

The manner how Paper is *Set out*, ſhall be ſhewed when I come to the Office of the *Warehouſe-keeper*.

¶ 10. *Of* Knocking up *the* Balls.

Ball Leathers (as I ſaid before in § 11. ¶ 21.) are either *Pelts* or *Sheep-skins*: If *Pelts*, they are choſen ſuch as have a ſtrong Grain, and the Greaſe well Wrought out of them: They are either Wet or Dry before they come to the *Preſs-mans* uſe: If Wet, he having before-hand provided a round Board, of about Nine inches and an half Diameter: Suppoſing the *Ball-ſtocks* to be ſix Inches diameter, lays the Round Board upon the whole *Pelt*, and cuts by the out-ſide of the Board ſo many round pieces as he can out of the *Pelt*, reſerving two for his preſent Uſe.

And hanging the reſt up (commonly upon the *Braces*

Braces of the *Preſs*) to dry, that they may not Stink or Mould before he have occaſion to uſe them.

But if his *Pelts* are Dry, he lays them to Soak (by choice in Chamber-ly) but I never heard, or by my experience could find why it is preferred before Fair Water: For the purpoſe of Soaking them is only to ſupple them.

If he Work with Leather, It is choſen with a Strong and cloſe grain: Wherefore by experience it is found that the Neck-piece, and indeed all along the back of the Skin is beſt; but it is commonly ſubject to be greaſie, which gives the *Preſs-man* ſometimes a great deal of trouble, to make his *Balls Take*. He alſo lays the *Ball Leathers* in *Soak* to ſupple them.

When they (either *Pelts* or *Leathers*) are well *Soaked*, he Rubs them well with both his Hands, and then twiſts and wrings them (as Women do Cloaths) to get the Water out again.

When they are well wrung, he Sits down upon a Seat about fourteen or fifteen Inches high, commonly a *Heap* of *White Paper*, if it ſtand conveniently for him; but not upon a *Printed Heap*, leaſt his Weight preſſing it cauſe the un-dryed *Inck* to *Set-off*: He ſits down, I ſay, and lays the *Ball-ſtock* upon his a little opened Thighs near his Knees, that with cloſing his Thighs he may hold it in a Steddy poſition, and with the Handle of the *Ball-ſtock* towards his Belly. Then taking the *Ball-Leather*, he laps or Folds about three quarters of an Inch of one part of it over ſo much of it towards his Left Hand into a Plaight, and laying the edges of that Plaight towards him, an Inch above the edge of the *Ball-ſtock*, he with the Head of

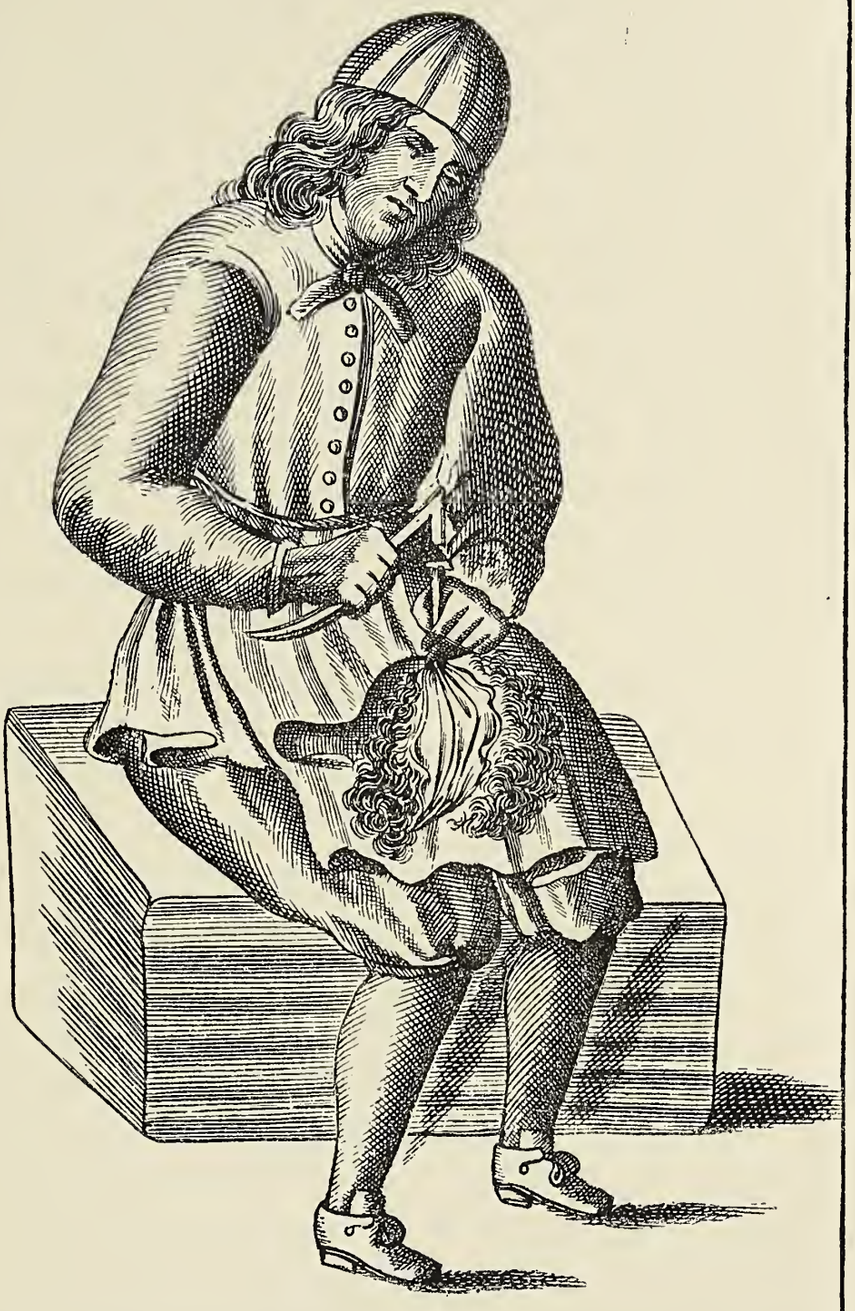
the

the *Sheeps-foot* drives a *Ball-nail* into the middle of the Plaight, a little more than half an Inch above the the edge of the *Ball-ſtock*: But he Drives the *Ball-nail* not quite up to the Head, but leaves about almoſt a quarter of an Inch of the Nail out; that with the *Claw* of the *Sheeps-foot* he may Draw the Nail again when occaſion ſerves.

Having driven the firſt Nail, he turns about the *Ball-ſtock*, till the oppoſite ſide, and as near as he can gueſs, point of the edge of the *Ball-ſtock* lyes directly upwards between his Thighs, (as before,) and then taking as near as he can gueſs the oppoſite edge of the *Ball-leather* between his Fore-fingers and Thumb of his Left Hand, he holds the edge of the *Ball-leather* upright, and having his Wooll or Hair *Teized*, lying by him on his right Hand on the Floor, he graſps at once as near as he can gueſs, ſo much as may juſt ſerve to fill his *Ball-leather* and the hollow of the *Ball-ſtock*; which bringing to the hollow of the *Ball-ſtock*, he draws the *Ball-leather* over it; and lapping the edges of the *Ball-leather* over, as before, makes another Plaight, and Drives another Nail, as before: So that here is now the two oppoſite Sides of the Leather Nailed on. Then he takes up the *Ball* by the Handle in his Left Hand, and obſerves whether the Wooll tend more to one than the other open half: If it do, he thruſts it with the ends of his Fingers of his Right Hand into the middle, or elſe over to the other Half, till the Wooll lyes equally on both the Halfs.

If he have put too much or too little Wooll into the *Ball*, he either takes ſome out, or adds more to, as the

Plate 30



the reſpective Half may require. Then lays it down again between his Thighs, as before, and lays another Plaight in the middle of the *Ball-leather* on one of the open Halves, and as near as he can gueſs, between the middle of the two oppoſite Nails; and Nails that Plaight down to the *Ball-ſtock*, as before.

In the like manner he Nails down the other open ſides, (now Quarters,) and then again takes a View how the Wooll is diſpoſed into the middle of the *Ball*; and where he finds it tend moſt to any of the open Quarters, he Drives the Wooll with the ends of his fingers, as before, or ſometimes when the *Balls* have been Wrought with, and blackt with *Inck*, with the *Head* of the *Sheeps-foot* into the middle, and then Nails down as before all the open Quarters as near as he can gueſs; between the middle of his former driven Nails, and then again, takes another View as before, to ſee how the whole *Ball* pleaſes him.

If he finds any of the Plaights laid too near one another, he draws that Nail, and alters that Plaight, to lay it as near as he can by gueſs, in the middle between the next two Plaights.

Then he conſiders if his *Ball* be round: If it be not, he thruſts the Wooll from the bunching-out ſide, towards the wanting ſide, either with the ends of his Fingers, or the Balls of one of his Hands; while the Wooll is yet looſe in the *Ball-ſtock*: For when the *Ball* has been Wrought withal, it will grow ſo hard, that the Wooll will not move out of its place.

Having *Knockt up* one *Ball* well, he *Knocks up* the other, as the firſt.

The

The *Balls* are well *Knockt up*, when the Wooll is equally diſperſed about all the Sides, and the middle ſmoothly covered with the *Leather*, viz. not riſing in Hillocks, or falling into Dales, not having too much Wooll in them, for that will ſubject them to ſoon hardning, and quickly be uneaſie for the *Preſs-man* to Work with; or too little, for that will make the *Leathers*, as the Wooll ſettles with Working ſoon flap, and wrap over it ſelf into Wrinkles. So that he cannot ſo well deſtribute his *Balls*: But the *Balls* ought to be indifferently plump, to feel like an Hard ſtuft Bed-pillow, or a ſtrong Spunge a little moiſtned with Water.

Having Knockt up the *Balls*, and Rub'd out the *Inck*, as ſhall be ſhewed in the next ¶, he trys if his *Balls* will *Take*, that is, he Dabs the top of one of them three or four times lightly upon the hither part of the *Inck-block*: If he finds the *Inck* ſticks to it equally all about, and that ſo much as has toucht the *Inck-block* is Black, it *Takes*: But if ſcarce any of the *Leather* is Black, or that it be Black and White in Splotches, then the *Balls* does not *Take*: Wherefore he conſiders whether his *Ball* be too Wet, or elſe Greaſie, for each of theſe inconveniences will hinder the *Taking* of the *Ball*.

If it be too Wet, he burns half a Sheet or an whole Sheet of Waſte Paper, and waves his *Ball* to and fro over the flame of it; but ſo quick and cautiouſly that he neither ſhrinks the *Leather* or Dryes it too much: In Winter time when a fire is at Hand, he dryes it gently by the fire.

If it be Greaſie, he with the edge of the *Ball-knife* ſcrapes

ſcrapes off the thick Oyl, that Works down out of the *Nut* and *Spindle* of the *Preſs*, or elſe with the point of his Knife takes a convenient quaintity of Oyl out of the *Plattin-pan*, or for want of either takes freſh Sallad Oyl and ſmears and ſpreads it well all over the whole *Ball-leather*; and then holding the *Ball-knife* in his Right Hand, with its edge a little ſloping downwards that it cut not the *Ball-leather*, and the handle of the *Ball-Stock* in his Left Hand, he joyns the bottom of the *Ball-leather*, viz. as near the outer edge of the *Leather* as he can, for the *Ball Nails* to the edge of the *Ball-knife*, and turning the *Ball* about by its Handle, preſſes it hard againſt the ſloapt edge of the *Ball-knife*, and at once drives the laid on Oyl and Greaſe too before the ſloapt edge of the *Ball-knife*; but he keeps the Handle of the *Ball-Stock*, and conſequently the whole *Ball* too, conſtantly turning, that the whole circumference of the *Ball* may be *Scraped*: And as the *Ball* has performed a Revolution againſt the ſloapt edge of the *Ball-knife*, he draws gradually his Left Hand a little backiſh, that the ſloapt edge of the *Ball-knife* may by ſeveral Spiral revolutions of the *Ball*, ſcrape up to the very top of the *Ball*, and carries before it the Oyl and Greaſe thither: Which having there, he gathers up upon the *Blade* of his *Ball-knife* and diſpoſes of it, as of ſo much Dirt and Filth.

After a due proceſs of either of theſe Operations reſpectively, his *Ball* will *Take*, and he again dabs gently the top of his *Ball* three or four times on the *Inck-block* (as before) and finding it *Take*, he takes the Handle of it into the clutched Fingers of his Left Hand,

Hand, holding the *Ball-ſtock* juſt a little above the circle of his Fore-finger and Thumb, and graſps the Handle of the other *Ball-ſtock* into his Right Hand, with the circle of his Finger and Thumb upwards, and the now bottom of his Right Hand downwards, but not reſting upon the *Ball-ſtock*; and trys if that *Ball* will *Take*, by dabbing the Leather of it three or four times upon the other *Ball*: If it do not *Take* with dabbing, he twiſts the *Balls* in either Hand cloſe and hard, contrary to one another, to beſmear the upper with the under *Ball*. If after this, the upper *Ball* do not *Take*, he conſiders the cauſe, and remedies it, as he did the firſt *Ball*.

¶ 11. *Of* Rubbing out Inck.

Before the *Preſs-man* goes to Work, he Rubs out his *Inck*.

If the *Inck* have lain long on the *Inck-block* ſince it was *Rubbed out*, the Superficies of it generally is dryed and hardened into a Film or Skin, wherefore the *Preſs-man* carefully takes this Film quite off with the *Slice* before he diſturb the Body of the *Inck*: For ſhould any, though never ſo little of it, mingle into the *Inck*, when the *Ball* happens to take up that little particle of Filin, and delivers it again upon the *Face* of the *Letter*, it will be a *Pick*, and Print black, and deface the Work: And if it get between the *Face* of two or more *Letters*, or the *Hollows* of them, it will obliterate all it covers. And if it be *Pull'd* upon, and the *Preſs-man* not careful

careful to over-look his Work, it may run through the whole *Heap*.

Wherefore having carefully skinned off the Film with the edge of the *Slice*, he ſcrapes his *Slice* clean with the *Ball-knife*, leſt ſome ſmall parts of the Film ſhould yet ſtick to, or remain on the *Slice*: And then with the *Slice* brings the body of *Inck* into the middle of the Plain of the *Inck-block*, and ſearches the ſides of the *Inck-block*, by thruſting the edge of the *Slice* forwards along them and all the angles of the *Inck-block*, and ſo ſcrapes off all the *Inck* as clean as he can, and gathers it to the whole maſs of *Inck*: Then with the *Slice* he turns the whole maſs about half a ſcore times over and over to mingle it well together, leſt ſome part of it ſhould be more conſolidated than the reſt: And to mingle it yet better, he then falls to *Rubbing* it with the *Brayer*, graſping the Handle of it in his Right Hand, he begins to *Rub* with all his ſtrength at the hithermoſt ſide-boundings of the Body of *Inck*, and keeping *Rubbing* through the almoſt whole length of the *Inck-block*, he gradually proceeds to the farther ſide of the Body of *Inck*. In this manner of *Rubbing* he bears hardeſt upon the farther edge of the *Brayer*, becauſe the hither ſides of the *Inck-block* are not fenced in with Rails about them; and ſhould he *Rub* with the bottom of the *Brayer* flat upon the *Inck-block*, he might draw too great a body of *Inck* to the unfenced ſides; ſo that the *Inck* would be ſubject to run off: This *Rubbing* is only to ſpread the *Inck* pretty equally over the ſuperfices of the *Inck-block*: Wherefore he now begins a circular *Rubbing*, obſerving in the circulation

culation of the *Brayer* that he always a little mounts the part of the edge of the bottom, which in its progress is ready to approach a prominent body of *Inck*, that it may somewhat slide over it, that the *Inck* be not lickt up high on the sides of the *Brayer*.

Then with the Handle of the *Slice* in his Left Hand and the Handle of the *Brayer* in his Right, he joyns the bottom edge of the *Slice* to the side of the *Brayer*, holding the flat of the *Slice* Horizontal, and the bottom of the *Brayer* perpendicular both over the *Inck-block*, and keeping his *Brayer* and *Slice* in this position, by turning the *Handle* of the *Brayer* in his Right Hand, held pretty stiff against the edge of the *Slice*, he scrapes off all the *Inck* that the side of the *Brayer* has lickt up: And setting down his *Brayer*, he takes the *Slice* in his Right Hand and lays what *Inck* he scrapes off the side of the *Brayer* again upon the *Inck-Block*, and *Slices* the whole mass of *Inck* into the farthermost corner of the *Inck-block*.

This *Rubbing* of the *Inck* may serve when the *Inck-block* had *Inck* on it before.

But if no *Inck* were on the *Inck-block* before, then he lays new *Inck* on the *Inck-block*: Wherefore he considers what Work he Works on: whether it be small or great *Letter*: If it be small *Letter*, or curious Work, the *Inck* must be *Strong* he Works with: But if it be great *Letter* or sleight Work, he makes *Soft Inck* serve, or at least mingles but a little *Hard Inck* with it.

If the *Inck* be too *Hard*, as sometimes in very frosty Weather it will be, then, though his Work be curious, yet he must *Rub* in a little *Soft Inck* to soften it; because

becauſe it will not elſe *Deſtribute* well upon the *Balls*; eſpecially if the *Leathers* be a little too Wet, or a little Greaſie: Beſides, it may and many times does pull and tear the Grain off the Skin; which not only ſpoils the Skin, but fills the *Form* full of *Picks*.

Sometimes when he finds the *Inck* too pale, he *Rubs* in *Blacking*, but he firſt joults the bottom of the *Blacking Tub* three or four times againſt the ground, that if by chance any dirt or filth have gotten into it, it may ſink to the bottom of the *Tub*.

But when he either mingles *Strong* and *Weak Inck* together, or elſe puts in *Blacking*, he applies himſelf again firſt to *Rubbing* with the *Brayer*, the length-way of the *Inck-block*, as before, and then to a circular *Rubbing*, as before; and to cleanſing his *Brayer*, as before; and this long-ways *Rubbing*, circular *Rubbing*, and cleanſing his *Brayer*, he reiterates ſo oft, till he judge the whole maſs of *Inck* ſufficiently *Rubbed* and mingled, and the *Blacking* perfectly imbibed by the *Inck*: And then he *Slices* the whole maſs of *Inck* to the farthermoſt corner of the *Inck-block*, as before.

¶ 12. *Of* Deſtributing *the* Balls.

I ſhewed you in ¶ 10 of this § how he dabb'd the *Ball* on the *Inck-block*, to try if it would *Take*: And I ſhewed you in what Poſture he handled the *Balls* when he tryed if the other *Ball* would *Take*: Therefore for *Taking Inck* and Handling the *Balls* I (to avoid tautology) refer you to that ¶.

Having now *Taken Inck*, and gotten the *Balls* in his Hands, in that poſture, he Works them ſide-ways upon

upon one another to and from him, and with a craft (acquired by uſe) in the Handling of the *Balls*, all the while keeps the Handles, and conſequently the whole *Ball-ſtocks* (both) turning round in his Hands and in a motion contrary to each other, *viz.* His under *Ball* moving from the Left Hand to the Right, and his upper *Ball* moving from his Right Hand to to the Left; and by and by in a ſecond motion contrary to the firſt, *viz.* his under *Ball* moving from the Right Hand to the Left, and his upper *Ball* moving from the Left Hand to the Right.

And theſe motions and Operations he continues ſo long till he judges, and in part perceives the *Inck* is equally *Deſtributed* all over the whole *Ball-Leathers.*

The firſt way of turning the *Ball Handles*, while the *Balls* are moved to and from him, is made by preſſing the ends or Balls of the fingers of both his Hands upon the *Ball-handles* from-wards his Hands: And the ſecond way of turning them contrary to the firſt, is made by gathering in the ends or Balls of of his fingers while they are in their circular to and fro motion. But becauſe in gathering in his fingers, he does ſomewhat diſ-ingage his graſp of the *Ball-Handles*, therefore he lightly and almoſt inſenſibly, toſſes the *Ball-ſtocks* a little up, that when they are diſ-ingaged from a cloſe graſp, his fingers ends may the eaſier draw the *Handles* towards him. This is a Hand-craft, which by continued uſe and practice, becomes familiar to his Hands.

¶ 13. *Of*

¶ 13. *Of* Beating.

The *Preſs-man* imagines, or by his eye judges the length of his *Form* (be it what Volumne it will) devided into four equal parts or Rows, which four Rows for diſtinction ſake, I ſhall number from the Left Hand to the right, with firſt Row, ſecond Row, third Row, fourth Row, juſt as an *Octavo Form* is exactly devided by four Rows of *Pages*.

He places his Left Hand *Ball* at the hither end of the firſt Row, ſo that though the *Ball* be round, yet the ſquare encompaſſed within that round ſhall ſufficiently cover ſo much of the ſquare of the hither end of that Row as it is well capable to cover; and his Right Hand *Ball* he ſets upon the hither end of the third Row: He ſets his *Balls* cloſe upon the *Face* of the *Letter*, with the *Handles* of the *Ball-ſtocks* a little bending towards him: But as he preſſes them upon the *Face* of the *Letter*, he mounts them perpendicular; and lifting at once both the *Balls* lightly juſt clear off the *Face* of the *Letter*, he removes them about the fifth part of the breadth of the *Form* upwards, *viz.* towards the farther ſide of the *Form*, and again ſets them cloſe down upon the *Face* of the *Letter*, with the Handles of the *Ball-ſtocks* again bending a little towards him, as before: and as he preſſes them upon the *Face* of the *Letter*, mounts them perpendicular, as before: Thus in about four or five or ſix ſuch motions, or rather removes of the *Balls*, according to the breadth of the *Form*, he *Beats* over the firſt and third Rows. Thus *Beating* from the hither

ther towards the farther ſide, is in *Preſs-mens* phraſe called *Going up the Form.*

The reaſon why he bends the *Handles* of the *Ball-ſtocks* a little towards him, is, that the *Ball-leathers* drag not upon the *Face* of the *Letter*; for then the edges of the hollows between the *Lines* or *Words*, or the edges of the cavities below the *Face* would ſcrape *Inck* off the *Balls* to ſtop up or choak the *Form.* And the reaſon why (before he removes them) he mounts the *Handles* of the *Ball-ſtocks* a little perpendicular, is, that the *Balls* may touch in their greateſt capacity upon the *Face* of the *Letter.*

To *Come down the Form*, he skips his *Balls* both at once from the firſt and third Row to the ſecond and fourth Row, and brings them down as he carried them up; only, as before, he bended the *Handles* of the *Ball-ſtocks* a little towards him, ſo now he bends them a little from him: That the *Ball-leathers* (now *Coming down*) drag not, as aforeſaid. Then in like manner he again skips the *Balls* from the ſecond and fourth Row to the firſt and third Row, and again *Goes up the Form* with the *Balls*, as he did before. And then again skips, as before, and *Comes down the Form* again with the *Balls.*

Having thus gone twice upwards and twice downwards with the *Balls*, the *Form* is ſufficiently *Beaten* in a train of Work, when the *Face* of the *Letter Takes* well.

But if he *Beats* the firſt Sheet of a freſh *Form*, or after a *Form* is *Waſhed*, or he makes a *Proof*, he *Goes* three four or five times *Upwards* and *Downwards*: Leaſt the *Face* of the *Letter* ſhould happen to be Wet

or

or moiſt, and conſequently un-apt to take *Inck*, without reiterated *Beatings*.

¶ 15. *Of* Pulling.

We will ſuppoſe now two *Preſs-men* going in the Morning to their train of Work: The one they diſtinguiſh by the name of *Firſt*, the other his *Second*, theſe call one another *Companions*: The *Firſt* is he that has wrought longeſt at that *Preſs*, except an Apprentice, for he muſt allow any Journey-man though new-come that ſtile: Generally the Maſter Printer repoſes the greateſt truſt upon his care and curioſity for good Work; although both are equally liable to perform it.

All the priviledge that the *Firſt* has above the *Second* is, that the *Firſt* takes his choice to *Pull* or *Beat* the agreed ſtint firſt: And that the *Second Knocks up the Balls*, *Waſhes the Forms*, *Teizes Wooll*, and does the other more ſervile Work, while the *Firſt* is imploid about making *Regiſter*, ordering the *Tympan*, *Friſket*, and *Points*, &c. or otherwiſe *Making Ready* the *Form*, &c.

The *Firſt* now takes his ſpell at *Pulling*: For the *Firſt* and *Second* take their ſpell of *Pulling* and *Beating* an agreed number of *Tokens*: Sometimes they agree to change every three *Tokens*, which is three Hours work, and ſometimes every ſix *Tokens*; that they may both *Pull* and *Beat* a like number of *Tokens* in one day.

Under the general notion of *Pulling* and *Beating* is compriſed all the operations that is in a train of work per-

performed by the *Puller* and the *Beater*: For though the *Puller Lays on Sheets*, Lays down the *Friſket*, Lays down the *Tympans* and *Friſket*, *Runs in* the *Carriage*, *Runs out* the *Carriage*, takes up the *Tympans*, Takes up the *Friſket*, *Picks* the *Form*, Takes off the Sheet, and Lays it on the *Heap*, yet all theſe Operations are in the general mingled and loſt in the name of *Pulling*. And as in *Pulling*, ſo in *Beating*; for though the *Beater Rubs* out his *Inck*, *Slices* it up, *Deſtribute* the *Balls*, peruſes the *Heap*, &c. yet all theſe Operations are loſt in the general name of *Beating*. Thus they ſay the *Firſt* or the *Second* is *Pulling*; or, the *Firſt* or the *Second* is *Beating*; though they are performing the different Operations aforeſaid: unleſs upon particular occaſions the reſpective Operations are particularly nam'd.

As there are many Operations conjunct to *Pulling*, and *Beating*, ſo the *Preſs-man* performs them with various Set and Formal Poſtures and Geſtures of the Body. For,

To take a Sheet off the *Heap*, He places his Body almoſt ſtraight before the hither ſide of the *Tympan*: I ſay almoſt ſtraight, Becauſe it is more ſtraight before the ſide of the *Tympan* than it is before the angle made by the *Paper-bench* and the ſide of the *Tympan*: But he nimbly twiſts the upper part of his Body a little backwards towards the *Heap*, the better to ſee he takes but one Sheet off, which he looſens from the reſt of the *Heap* (as I have ſhewed before) by drawing the back-ſide of the Nail of his right Thumb on his Right Hand nimbly over almoſt the whole length of the *Heap*, and receiving the hither end of the Sheet with

with the inſide of his Left Hand fingers and Thumb catches with his Right Hand about two inches within the farther edge of the Sheet near the upper corner, and about the length of his Thumb below the hither edge of the Sheet, and brings it nimbly to the *Tympan*: And at the ſame time twiſts his Body again ſtraight before the *Tympan*, only a very little moving his right Foot from its firſt Station a little forwards under the *Carriage Plank*: And as the Sheet is coming to the *Tympan* (we ſuppoſe now he Works upon *White Paper*) he nimbly diſpoſes the fingers of his Right Hand under the farther edge of the Sheet near the upper corner; and having the Sheet thus in both his Hands, lays the farther ſide and two extream corners of the Sheet down even upon the farther ſide and extream farther corners of the *Tympan-ſheet*, but he is careful the upper corner of the Sheet be firſt laid even, upon the upper corner of the *Tympan-ſheet*; that he may the ſooner diſingage his Right Hand: And if by the nimble caſting his eye, he perceive the ſides of the Sheet lye un-even upon the *Tympan-ſheet*, he with his Left Hand at the bottom corner of the Sheet, either draws it backwards, or pulls it forwards, as the Sheet may lye higher or lower on the hither corners of the *Tympan-ſheet*, while his Right Hand being diſingaged, as aforeſaid, is removed to the backſide the *Ear* of the *Friſket*, and with it gives it a light touch to double it down upon the *Tympan*. And by this time his Left Hand is alſo diſingaged, and ſlipt to the hither under corner of the *Friſket*, to receive it, that it fall neither too hard or too quick down upon the *Tympan*: For hard falling

falling may ſhake the looſe Sheet on the *Tympan* out of its place; and ſo may the quick preſſure of the Air between the *Tympan* and *Frisket*, after the Sheet is well laid: and while his Left Hand receives the *Frisket* his right is diſingaged from the *Ear* of the *Frisket*, and removed to the middle of the back-ſide the *Tympan*; which he graſps between the Balls of his Fingers and Thumb, to lift it off the *Gallows*, and double it and the *Frisket* together on the *Form*. And while the *Tympan* is coming, he ſlips his Left Hand Fingers from under the *Frisket* to the hither outer corner of it, as well to keep the Sheet cloſe to the *Tympan* in its poſition, as to avoid the jobbing of the lower ſide of the *Frisket* againſt any ſmall ſquare ſhoulder, either of the *Furniture*, *Quoins*, *Chaſe*, or the corners that may ſtand higher than their common Plain.

Then nimbly ſlipping his Left Hand, he with it graſps the *Rounce*, and with a moderate ſtrength, nimbly gives its *Winch* about one Turn round; I ſay about, becauſe the firſt *Pull* will generally fall out to be made about the middle of the *Carriage*; (as was ſhewed in § 11. ¶ 16.) but perhaps not juſt in the middle: yet to regulate his *Runing in*, he made a mark before on the farther Rail of the *Tympan*, (as I ſhewed in ¶ 3. of this §) to which mark he *Runs* the *Carriage in*, till he bring the mark in a Range with the fore-edge of the *Plattin*; and as it is coming, skips his Hand to within an Inch or two of the end of the *Bar*, and then at once gently leans his Body back, that his Arm as he *Pulls* the *Bar* towards him may keep a ſtraight poſture; becauſe in a *Pull* it has then the

the greateſt ſtrength. And he alſo ſlips his right Foot upon the *Foot-ſtep*, while his Left Hand holds faſt by the *Rounce*; as well to reſt on the *Foot-ſtep* and *Rounce*, as to enable his Body to make a ſtronger *Pull*; which will prove *Longer* or *Shorter*, according to the ſtrength put to it, and alſo the *Hard* or *Soft Juſtifying* of the *Head*, (as was ſhewed in ¶ 5. of this §.)

Then diſingaging his Right Hand again from the *Handle* of the *Bar*, he ſlips it to the *Bow* of the *Bar*, before the Handle fly quite back to the *Cheek* of the *Preſs*: For ſhould the *Bar* by its forcible Spring knock hard againſt the *Cheek* of the *Preſs*, it might not only ſhake ſome of its Parts or circumſtantial appurtenances out of order, but ſubject the whole Machine with oft reiteration to an unſtable poſition. Beſides, the farther the *Bar* flyes back, the more he hinders quick riddance in recovering it again. But yet he muſt let the *Bar* fly ſo far back as that the *Tympan* may juſt riſe clear off the *Plattin*; leſt when he *Runs in* his *Second Pull*, the *Face* of the *Plattin* rub upon the *Tympan*, and ſhoves the Sheet upon the *Face* of the *Letter*, and ſometimes *Slurs*, and ſometimes *Doubles* it upon the *Face* of the *Letter*.

Having *Pull'd* the *Firſt Pull*, and having the *Rounce* ſtill in his Left Hand, He turns the *Rounce* about again, till the *Carriage Runs in* ſo far, as that the ſecond mark on the Rail of the *Tympan* comes into a Range with the hither edge of the *Plattin*, as before the firſt mark did; and then *Pulls* his ſecond *Pull*, as he did his firſt; and ſlips his Right Hand again off the *Handle* of the *Bar* to the *Bow*, (as before) and guides the *Bar* up to its *Catch* leiſurely, that coming now

now near the *Cheek* it knock not againſt it: and juſt as he has *Pulled* his *Second Pull*, he gives a pretty quick and ſtrong preſſure upon the *Rounce*, to turn it back, and the *Carriage* out again: And ſo ſoon as he has given that one preſſure, (as aforeſaid) he deſingages his Left Hand from the *Rounce*, and claps the fingers of it under the middle of the *Tympan*, and on the *Ear* of the *Frisket*: and while this is doing, removes his Right Hand to the now upper, but immediately it will be the under-ſide of the *Tympan Rail*, within four or five Inches of the upper end of it, to receive the *Tympan*, as it is lifted up off the *Form* by his Left Hand. And having thus received it, lets it deſcend gently down on the *Gallows*. And as it is deſcending, ſlips his Left Hand fingers under the hither lower corner of the *Frisket*, and gives the *Frisket* a toſs up; while by this time his Right Hand being diſingaged from the *Tympan*, is ready to catch the *Frisket* by the *Ear*, and convey it quick and gently to its *Stay*: And while the *Frisket* is going up; he ſlips the end of the middle finger of his Left Hand, or ſometimes the ends of his two middle fingers with their Balls upwards, under the hither lower corner of the *Pulled off Sheet*, and at the inſtant he has got them under, he nimbly bows his Joynts upwards, to throw up the corner of the Sheet, to make it mount a little, for him to gather about two Inches hold of it between the Balls of his Thumb and fore-finger. And heaving the whole Sheet by this corner a little upwards, He at the ſame time lifts it off the *Points*, and draws it ſomewhat towards him; and as it comes, catches it near the upper corner of the ſame ſide of the Sheet,

Sheet, between the foremoſt Joynts of his fore-fingers and Ball of the Thumb of his Right Hand, and nimbly twiſting about his Body towards the *Paper-bench* carries the Sheet over the *Heap* of *White-paper* to a *Paper-board*, which before he placed beyond that *Heap* on his Right Hand, (as aforeſaid in ¶ 14.) and lays it down upon a Waſte-ſheet laid for that purpoſe on that *Paper-board*; but while it is coming over the *White-paper Heap*, though he have the Sheet between both his fore-fingers and Thumbs, yet he holds the Sheet ſo looſly that it may move between them as on two Centers, as his Body twiſts about (as aforeſaid) from the ſide of the *Tympan* towards the ſide of the *Paper-bench*.

Thus you ſee both the *Preſs-mans* Hands at the ſame time alternatively ingaged in different Operations: For while his Right Hand is imployed in one Action his left is buſie about another, and theſe exerciſes ſo ſuddenly varied, that they ſeem to ſlide into one another; one Poſture beginning when the former is but half performed.

Having thus *Pulled* one Sheet, and laid it down: He turns his Body towards the *Tympan* again, and as he is turning gives the next Sheet on the *White-paper Heap* a Touch with the backſide of the Nail of his Right Thumb, as before, to draw it a little over the hither edge of the *Heap*, and lays it on the *Tympan*, &c. as he did the firſt; and ſo ſucceſſively every Sheet till the whole *Heap* of *White-paper* be *Wrought off*.

As he comes to a *Token-ſheet*, he un-doubles that, and ſmooths out the Creaſe with the back-ſide of the

the Nails of his Right Hand, that the *Face* of the *Letter* may Print upon ſmooth Paper. And being Printed off, he folds it again, as before, for a *Token-ſheet* when he works the *Reiteration*.

Having *Wrought off* the *White-paper*, he turns the *Heap* thus:

He takes the *Paper-board* that his *White-paper* lay on, and ſets it down on the ground: Then removes the *Heap* to his Left Hand; then takes up the *Paper-board*, and lays it on his Right Hand: And if it be *Twelves*, or any *Form Impoſed* like *Twelves*, as *Twenty fours*, &c. he turns it from one long ſide of the Paper to the other, that is, the long ſide of the Paper that ſtands on his Right Hand when the Printed ſide lies upwards, he turns over to his Left Hand, and lays the un-printed ſide upwards. In performing this, he graſps off of the *Wrought off Heap* ſo much at once between both his Hands as he can well govern, without diſordering the eveneſs of the ſides of the *Heap*, viz. a *Token*, or more, and lays that upon the *Paper-board*; then takes another graſp in like manner, and lays that on the firſt graſp, and ſo ſucceſſively, till he have turned the whole *Heap*, graſp by graſp. Then removes the *Heap* near the *Tympan*, and lays the other *Paper-board* beyond it, as the firſt *Paper-board* ſtood before; always remembring to lay a Waſte-ſheet firſt on the *Paper-board*.

Having now turned the *Heap*, and made *Regiſter* on the *Reteration Form* (as was ſhewed in ¶ 7. of this §) he Works off the *Reteration*: But he ſomewhat varies his poſture in the *Laying on his Sheets*: For as before, when he wrought *White Paper*, he catcht

catcht the Sheet by the upper farther corner with his Right Hand, he now having heaved up the Sheet (as aforeſaid) catches it as near the farther ſide of the farther *Point-hole* as he can, with the Ball of his Right Hand Thumb above the Sheet, and the Ball of his fore-finger under the Sheet, the readier to lay the *Point-hole* over its reſpective *Point*: which having done, he ſlips his Body a little backwards, and both his Hands with it, his Right Hand towards the hither *Point-hole*, with the back-ſides of the Nails of his fingers to draw or ſtroak it over the *Point*: and the fingers of his Left Hand, as they come from the farther corner, nimbly ſlipping along the bottom edge of the Sheet, till they come to the hither corner; and then with his fore-finger and Thumb, layes hold of it, to help guide the *Point-hole* on that *Point* alſo: Then *Pulls* that Sheet, as before, as he did the *White Paper*, and ſo ſucceſſively all the reſt of the *Reteration*. Only, the *Token-ſheets*, as he meets with them, he Folds not down again, as he did the *White Paper*.

If a *Preſs-man* have no *Companion*, but works alone; he has a little oblong Square *Form* or Bench made to ſtand ſo high as the *Face* of the *Letter* upon the *Preſs-ſtone*, and ſo long as to contain the *Balls* when ſet upon the *Ball-leathers*.

This Form or Bench ſome Work-men will place on the hither ſide the hither *Cheek*, within about half an Inch of the foreſide of the *Cheek*: And other Work-men will place it on the farther ſide of the *Carriage*; each ſort of Work-men ſuppoſing that in the place he ſets it, the *Balls* ſtand moſt commodious for his

his quick taking up and ſetting down: I ſhall not plead the convenience of either, but in ſhort ſpeak to the inconveniences of both.

The inconvenience of placing it on the hither ſide the hither *Cheek*, is, that the *Preſs-man* muſt twiſt his Body ſomewhat about to take up the *Balls*. And the inconvenience of placing it on the further ſide the *Carriage*, is, that the *Preſs-man* muſt thruſt his Body over the *Form* to take up the *Balls*: both ways ſtrain the Body, and hinder riddance.

Thoſe that place it on the hither ſide the *Cheek*, begin and end their *Beating* as has already been ſhewed, *viz.* on the hither ſide the *Form*: But thoſe that place it on the farther ſide the *Carriage*, begin and end their *Beating* on the Rows on the farther ſide the *Form*.

One *Preſs-man* in his train of Work will *Beat* ſo ſoon as he has laid the *Tympan* on the *Gallows* after *Pulling*: Another will not *Beat* till he has laid his Sheet on the *Tympan*, and doubled the *Friſket* down on it: both ſorts fancying their own way moſt quick and commodious: For theſe conveniences are the purpoſes they both drive at.

¶ 16. *Of Printing* Red, *or other Colours with* Black.

When *Red* and *Black* are to be Printed upon the ſame Sheet, the *Preſs-man* firſt *Makes Regiſter*, as was ſhewed ¶ 7. and *Makes Ready* his *Form* as was ſhewed ¶ 14. of this §. Then having a new *Friſket Drawn*, as was ſhewed ¶ 8. He Prints upon his new *Friſket* with *Black*. And having before a *Proof-ſheet* Printed

Printed *Black*, with the Words to be Printed *Red* under-lined on that *Proof-ſheet*; He takes off his *Friſket*, and lays it flat on a *Paper-board*, and with a ſharp-pointed Pen-knife neatly cuts out thoſe words on the *Friſket*, and about half a Scaboard *Margin* round about the words, that he finds under-lined on the *Proof-ſheet*: Then ſets the *Friſket* by till he has wrought off his *Heap* with *Black*, and puts his common *Friſket* on the *Joynts* of the *Tympan* again.

While the *Preſs-man* is *Cutting* the *Friſket*, the *Compoſiter* takes thoſe *Words* out of the *Form* that are *Under-lin'd* on the *Proof-ſheet*, and in their place puts *Quadrats*, m-*Quadrats*, *Spaces*, &c. to *Juſtifie* the *Lines* up again.

Then *Locking up* the *Form*, the *Preſs-man* Works off the *Heap* Black, as was ſhewed in the laſt ¶.

Having wrought off his *Heap* Black, he takes off the common *Friſket*, and puts on his new cut *Friſket*: Then taking a piece of thick Scaboard he cuts it into ſo many ſmall ſlips as there are *Whites* in the *Form* to be Printed with *Red*; Theſe ſmall ſlips he cuts exactly to the length of the *Quadrats*, &c. the *Compoſiter* put in, and to the breadth of the *Body*; but rather a ſmall matter leſs than bigger, leſt they bind at the bottom of the *Shank* of the *Letter*: for when the *Compoſiter* takes out the *Quadrats*, &c. he put in before the *Form* was *Wrought off* Black, theſe ſlips of Scaboards the *Preſs-man* pricks on the Point of a *Bodkin* and puts them into their reſpective holes: And being looſen'd off the Point of the *Bodkin* with the blunt Point of another *Bodkin*, are laid down flat on the *Preſs-ſtone*; Theſe ſlips are called *Underlays*, and are

are described in ¶ 14. of this §. Upon these *Underlays* the *Compositer* puts in again the *Words* or *Letters* he took out before the *Form* was *Wrought off Black*: So that these *Words* now stand higher than the other *Matter* of the *Form*, and therefore will Print when the other *Matter* will not. But yet for the more assurance that the other *Matter* Print not, the *New-cut Frisket* was prepar'd, which hinders any thing to Print but what Prints through the Holes cut in it; which Holes these *Underlaid Words* fall exactly through.

Having mingled the Red, or any other intended Colour with *Varnish*, as shall be shew'd in the next ¶, he *Beats* the *Form* as with *Black*; and *Pulls* it very lightly, lest these *Underlaid Words* standing higher than the rest of the *Matter*, Print too *Hard*.

¶ 17. *Of mixing and Grinding Colours with* Varnish.

Varnish is the common *Menstruum* for all Colours that are to be used in Printing.

Red is the chief Colour that is used with *Black* in Book-Printing: of *Reds* there are two sorts in general use, *viz.* *Vermillion* and *Red-Lead*; *Vermillion* is the deepest and purest Red, and always used to Books of Price. *Red-Lead* is much more faint and foul, and though more used than *Vermillion*, yet used only to Books of Vulgar Sale and Low price, as Almanacks, *&c.*

Yet may other Colours also be used to Print withal; yea, any Colours that are used in Oyl-Painting, as *Lake* and *Russet*, which are *Reds* deeper than *Ver-*

Vermillion; *Virditur Indico* and *Bice* for Blews; *Orpment*, *Pinck*, *Yellow Oaker*, for Yellow: *Virdigreace*, and Green *Virditur*, for Greens: or what other Colours may be fancied.

But all Colours for Printing muſt be Ground with *Soft Varniſh*; eſpecially thoſe Colours that are of themſelves Dryers; as *Red-Lead*, *Vermillion*, *Orpment*, *Verdigreaſe*; For ſhould they be Ground with *Hard Varniſh* the Colour'd *Inck* would dry and harden ſo quick and faſt upon the *Form*, that it would ſoon be choaked up, and conſequently want *Waſhing* e're the *Form* be *Wrought off*; which would be very troubleſome to the *Preſs-man*, becauſe he muſt expect to have all his *Underlays* to new fit to their places: And beſides, it will ſo Dry and Harden upon the *Balls*, that the Grain of the *Leathers* would quickly tear off, and fill the *Form* full of *Picks*.

The fitteſt Colours therefore for Printing, are ſuch as are of the lighteſt Body and Brighteſt Colour.

They are to be Ground with a Mullar on a ſmooth Marble Stone, ſo long that the Colour becomes impalpable, and is throughly mingled with the *Varniſh*.

¶ 18. *Of Printing with Gold and Silver.*

This Operation is ſeldom uſed but for Printing Names; and therefore rarely dreſt in a *Form* to the *Preſs*; but is uſually Printed in the *Stick*: And then the *Compoſiter Juſtifies* his *Stick* very *Hard*, as well that

that the *Letters* fall not out when the *Back* of the *Stick* is turned upwards, as that the ſtrength of the *Hard Varniſh* the *Face* of the *Letter* is *Beat* with, pulls not the *Letter* out of the *Stick.*

Therefore the *Preſs-man* makes two little *Balls*, by tying about an Handful of Wooll in new clean Leather, and dabs one of his *Balls* upon the Hardeſt *Varniſh* he has, and with the other deſtributes his *Varniſh* to a convenient Fatneſs, as he did his *Balls* in ¶ 12. With one of theſe *Balls* he *Beats* the *Name*; and having his Paper *Wet*, he lays a ſingle *Blanket* on the *Correcting-ſtone*, and his Paper on the *Blanket*; and with a *Riglet* fitted to the *Stick*, he preſſes the *Letter* to keep it ſtraight in *Line*: Then places the *Face* of the *Letter* exactly flat down upon the Paper, and with the force of both his Hands preſſes the *Letter* hard and even down upon the Paper, to receive an Impreſſion: But he takes care not to wriggle the *Letter* in the *Stick* backwards or forwards, leſt either the *Beard* Print, or the ſides of the *Letter* be more or leſs beſmeared with the *Varniſh*: Becauſe the Gold or Silver will ſtick to the leaſt Sully that the *Varniſh* may chance to make.

Then cutting his Gold or Silver to a ſize full big enough to cover the Printed *Name* or *Matter*, he lays his Gold or Silver on what was Printed, and with a little White Cotton gently preſſes the Gold or Silver upon the Printed *Matter*, and lets the Paper lye by a while; as well that it may dry, as the *Varniſh* Harden, (which will quickly be) he with his Handkerchief gently wipes over the Printed *Matter*. So ſhall all the Gold or Silver that was

toucht

toucht by the *Varniſh*, ſtick to the *Varniſh* on the Paper, and the other will wipe away.

If he liſts to Poliſh it, he uſes a Tooth or the Ivory Handle of a Knife.

¶ 19. *Rules obſerved; and Remedies to the Inconveniences the* Preſs-man *may meet with in a Train of Work.*

1. The *Preſs-man* is to make a *Proof* ſo oft as occaſion requires: If he takes off his *Form* to make a *Proof*, he *Un-locks* and lays the *Quoins*, as ſhall be ſhewed when I come to *Waſhing* of the *Form*: but many *Printing-houſes* have an empty *Preſs* ſtands by to make *Proves* on.

The *Compoſiter* having brought the *Form* to the *Preſs*, lays it down on the *Preſs-ſtone*, and the *Preſs-man* places it even under the *Plattin*, that the *Plattin Bear* not harder on the hither or farther ſide of the *Form*: Then he *Pulls* the *Cards* upon the *Form*, to preſs it into a flat poſition: Then *Beats* the *Form* four or five times over, that he may be ſure it *Take*: Then he lays the *Proof-ſheet* on the *Form*, ſo as by his Judgement it ſhall have an equal *Margin* on all its oppoſite ſides, and a double *Blanket* on the *Proof-ſheet*; and *Running in* the *Carriage*, *Pulls* the *Proof-ſheet*: Having *Pull'd* it, he *Runs-out* the *Carriage* again, and takes the *Proof-ſheet* off the *Form*. Then with the *Ly-bruſh* dipt in *Ly*, he *Rubs over* the *Face* of the *Letter* three or four times, to Waſh off what *Inck* may remain on it, and carries the *Form* again

again to the *Correcting-ſtone* and lays it down: And the *Proof* he carries to the *Compoſiters Caſe*.

2. If the *Form* he Works on be *Small-letter*, or *Old Letter*, he uſes *Strong Inck*; and *Beats Lean*: For *Weak Inck* and *Fat Beating*, will quickly Choak up the *Face* of the *Letter*. But to fetch off *Hard Inck* thin *Beat* on the *Face* of the *Letter*, he *Pulls Hard*. But if the *Form* be great *Letter* or *Black Engliſh Letter*, it will allow *Fatter Beating*.

3. He keeps a conſtant and methodical poſture and geſture in every action of *Pulling* and *Beating*, which in a train of Work becomes habitual to him, and eaſes his Body, by not running into unneceſſary divertions of Poſtures or Geſtures in his Labour, and it eaſes his mind from much of its care, for the ſame cauſes have conſtantly the ſame effects. And a *Pull* of the ſame ſtrength upon the ſame *Form*, with the ſame *Beating*, and with the ſame *Blankets*, &c. will give the ſame Colour and Impreſſion.

4. That every two Sheets, if the *Form* be ſmall *Letter* (rarely three, unleſs *Great Letter*) he *Takes Inck*; and ſo ſoon as he comes off the *Form*, viz. has *Beat* it, he falls to *Deſtributing* his *Balls*. And that Sheet which he *Takes* not *Inck* he ſteps to the *Heap* to overlook the Colour, *viz.* whether he has *Taken* too much or too little *Inck*; and to ſee if no accidents have befallen the *Form*, viz. that no *Letters*, *Quadrats* or *Furniture*, &c. Riſe, that no *Letters* are *Batter'd*; That *Bearers* fail not, *viz.* grow ſo thin with long *Pulling* on, as not to perform the office of *Bearers*; that the *Regiſter* keep good; that no *Pick* be got into the *Form*, or any other accident that may deface

face the beauty of the Work, but all this while ſtill keeps his *Balls Deſtributing*.

If he have taken too much *Inck*, which ſometimes may happen (but ſeldom for want of careleſsneſs) he will not *Take Inck* again, till he have wrought his *Balls* to a good and moderate Colour. But if the Sheet already *Pull'd* be ſo *Black* that it may not tolerably paſs, he Doubles or Folds it in the middle and lays it croſs the *Heap*, that the *Gatherer* may take or leave it, in caſe the *Heap* falls Short. If he foreſee the next Sheet will alſo be too *Black*, he takes a Dry Sheet of Waſte Paper between his *Balls* and *Deſtributes* upon that Dry Sheet, that it may take off the *Inck*.

If in doing this, the ſtrength of the *Inck* have *Pull'd* the *Paper* to pieces, ſo that ſmall rowl'd-up bits may ſtick upon the *Ball-leathers*, if they be but a few he picks them off with his Fore-finger and Thumb, but if there be many he makes his *Balls* clean by *Scraping* them (as I ſhewed in ¶ 10. of this §) for elſe theſe ſmall rowl'd-up bits of Paper will be apt to fill the *Form* full of *Picks*.

If *Letters*, *Quadrats* or *Furniture Riſe*, he puts them down, the *Letters* and *Quadrats* with his *Bodkin*, and the *Furniture* with his *Hammer*, and *Locks* the *Quarter* they are in, a little Harder.

If any *Letters* are *Batter'd*, he *Unlocks* the *Quarter* they are in, and deſires the *Compoſiter* to put in others in their room.

If *Bearers* Fail, that is, Squeeze thinner with long *Pulling* on, he takes thoſe *Bearers* off, if they are on the *Friſket*, and puts on thicker: But if the *Furniture*,

ture, were *Under-laid* (as I ſhewed in ¶ 7. of this §) he *Unlocks* the *Quarter* they are in, and *Under-lays* them according to his Judgement.

If *Regiſter* be *Out*, which ſometimes happens by the ſtarting of the *Quoins*, he mends it, as I ſhewed in ¶ 7. of this §.

If a few *Picks* are got into the *Form*, that is, little bits of Paper, Skin or Film of *Inck*, Greaſe or other filth which may ſtick to the *Face*, or get into the hollows of the *Letter*, he with the point of a Needle picks them out: But if many be gotten in, he takes off the *Form* and Waſhes it, as ſhall hereafter be ſhewed.

And though he every other Sheet overlook the *Heap* (as was ſaid before) yet his *Companion* that *Pulls*, by an habitual uſe caſts his eye upon every ſingle Sheet; Yet rarely hinders his riddance by it, for while he is taking the Sheet off the *Tympan*, he gives a quick ſpreading glance upon it, and lays it down, as was ſhewed ¶ 15. of this §, unleſs he perceive ſomewhat to mend: For then he lets it lye on the *Tympan* till he has mended what was amiſs.

And that he may *Take Inck* more equally, to keep the *Balls* of an equal Fatneſs, he keeps the *Rubb'd out Inck* on the *Inck-block* of an equal Fatneſs; which to do, he with the under-edge of the bottom of the *Brayer*, draws often from the maſs of *Inck* a ſmall, (and as near as he can gueſs) an equal quantity of *Inck*, viz. about the quantity of a Pea, and with the *Brayer* Rubs and diſperſes that *Inck* of an equal thickneſs, all over the hither corner of the *Inck-block*. While this is doing he holds the *Balls* upright on one another

another in his Left Hand, leaning the Handle of the uppermoſt *Ball-ſtock* againſt his Breaſt.

The equal and often *Taking* of *Inck* in a ſmall quantity, and conſtant *Deſtributing* of the *Balls*, is the onlieſt means to keep the *Heap* throughout of an equal Colour, and to avoid *Beating* of *Fryers*.

5. If he meets with naughty Sheets in his Work; as torn, or ſtain'd, *&c.* he Prints them not, but throws them under the *Paper-bench*; and if any creaſe or wrinkles be in any Sheet, he laying the backs of his four Left Hand fingers upon a ſmooth place in the Sheet, rubs with the backs of the Nails of his Right Hand Fingers from-wards him upon the wrinckles, till he have ſmoothened them.

6. And though his conſtant care is to Lay every particular Sheet even upon the *Heap*, yet it often happens either through *White Pages* that may come in the *Form*, which becauſe not Printed lye ſolid on one another, the unequal preſſing of one ſide or end of the Paper, or the unequal Bearing of the *Plattin* on one ſide or end of the *Form*; I ſay it often happens by theſe accidents, that the *Heap*, as it grows higher is on one part of the Sheet raiſed above, and on another part ſunk below an Horizontal level: It is raiſed higher on that ſide or end of the *Heap* moſt preſt in the *Tympan*, and by conſequence makes the Paper there more Huffie; Becauſe deep preſſure of the *Letter* into the Paper below the common level of the Sheet bears the Paper off from the *Heap*, on the underſide the Sheet; and the greater the number of Sheets are thus Printed off and laid on the *Heap*, the more that ſide or end of the *Heap* ſhall Riſe:

And

And by the Rule of Contraries, when *White Pages* come in the *Form*, the greater number of Sheets laid on the *Heap*, ſhall where thoſe *White Pages* lye, make the *Heap* lower in that place, becauſe they clap ſolider together, for want of Printing the Paper through the backſide level of each Sheet: So that the ſmall un-level lying of every Sheet, though unperceptable, in a ſmall number of Sheets, makes each Sheet incline to the loweſt ſide of the *Heap*, and as the *Heap* accumulates heighth, throws the *Heap* more or leſs towards the dripping ſide, or end over the bottom of the *Heap*.

To remedy which, he claps the inſides of both his Hands againſt both the ends of the *Heap*, but more forcibly againſt the Hanging over end towards the other end, till he has drove the *Heap* into an upright poſition.

If either of the ſides hang over, he with the inſide of his Left Hand commonly againſt the farther ſide of the *Heap*, and the outſide of his Right Hand fingers on the hither ſide the *Heap*, either draws the hanging over ſide towards him with his Left Hand, or thruſts it from him with his Right Hand fingers, as aforeſaid, while his oppoſite Hand does the office of a ſtop, that it be not drawn too forward, or thruſt too much backward. Then where the *Heap* riſes above the Level, he with the inſide flats of one or both of his Hands preſſes it down into an Horizontal Plain.

7. If it be a *Reteration* he Works, and a great Number is laid on, he uſes a *Tympan-cloath* inſtead of a *Tympan-ſheet*: This *Tympan-cloath* is a Fine and even

even Linnen Cloath, about an Inch or two larger on every ſide than the Paper he Works on: He Wets this Cloath and wrings the Water out again, ſo that it remains only moiſt: Then lays his Cloath inſtead of his *Tympan-ſheet*, and Paſtes the corners of the under ſide of it to the *Tympan*, and Works upon it as on a *Tympan-ſheet*.

One reaſon why he uſes a Cloath to Work the *Reteration* on rather than a Sheet of Paper, is, becauſe a Sheet of Paper quickly wears out, which a Cloath will not do. Another reaſon is, that when the *Inck* that wrought off the *White Paper* Sets off upon the *Tympan Cloath*, it may in clean *Ly* be waſht clean again: For a good *Preſs-man* will not Work on a foul *Tympan Cloath* or (if he uſe no Cloath) on a foul *Tympan-ſheet*, becauſe as the *Inck* of the *White-paper* aforeſaid, ſet off on the *Tympan Cloath*, ſo the more the *Tympan Cloath* has gathered *Inck* from the *White-Paper*, the more it will Return or give back again, towards the beſmearing of every Sheet that is Printed on it.

The reaſon why the *Preſs-man* does not uſe a Cloath to Work the *White Paper* with, is, becauſe in Working the *White-Paper*, the uſe of the *Tympan-Sheet* is principally to lay all the Sheets of the *Heap* even by, as being of the exact ſize with all the reſt of the *Heap*, which a *Tympan-Cloath* is not, nor could it, without great trouble, be reduced to that ſize by the *Preſs-man*, or if reduced to that ſize, without much difficulty be laid even or ſquare on the *Tympan*: Becauſe the *Cloath* when *Wet*, will be hard to be kept ſtraight and ſquare, but every ſide will

will naturally run into irregularities, which a Sheet of *White Paper* will not do.

8. Sometimes, through the looſe *Hanging* of the *Plattin* on its *Cords*, or through the much wearing of the *Hoſe*, or the *Garter*, or the *Worms* in the *Nut* and *Spindle*, or the irregular wearing of the *Toe* of the *Spindle* in its *Nut*, or too much play of the Tennants of the *Head* in their Morteſſes, or the irregular dryneſs of the *Tympan*, or through irregular *Runing in* of the *Carriage*, It will happen that the *Letter* will *Double* upon the Sheets, that is, Print double.

If the looſe Hanging of the *Plattin* be the cauſe, it is eaſily mended by turning about the *Female Screws* fitted to the tops of the *Hoſe*, as was ſhewed ¶ 4. of this §.

If the *Hoſe* be worn, or the ſquare holes the *Hoſe* Works in, it may for the preſent be botcht up by putting Scaboards between the *Hoſe* and the ſquare holes of the *Till*; but to mend it perfectly either another *Till* muſt be made, or a new *Hoſe*, or both.

If the *Garter* be worn too wide; the Smith muſt either mend the Old, or make a new one.

If the *Worms* of the *Nut* or *Spindle* be worn, the *Spindle* muſt be examin'd by the Smith, and made true, and have a new *Nut* Caſt on it.

If the *Toe* of the *Spindle* and its *Nut*, or either of them be worn irregularly, it is Smiths Work to mend.

If the Tennants in the *Head* have too much Play in their Morteſſes; which though it ſeldom happens, yet if the *Head* were not made of well ſeaſoned Stuff, the Tennants may be ſubject to ſhrink, and ſo have too

too much play. There is no ſubſtantial remedying this fault, but by making a new *Head.*

If an unproper temperature of the *Tympan* be the cauſe; that is, when it is dry in one place and moiſt in another, the dryed place may by its ſpring force the Paper againſt the *Face* of the *Letter*, and in part Print it before it come to feel the force of the *Plattin*; (but this is rather ſlurring than *Doubling*) and when the force of the *Plattin* does come, the ſpring in the dryed part will again remove the Paper, and the force of the *Plattin* gives its full Impreſſion where the Paper is thus removed, but when it is real *Doubling*, it happens generally on the whole Sheet.

This *Doubling* or *Slurring* is mended, by reducing the dryeſt part of the *Tympan* to an equal moiſt temperature with the moiſteſt.

Doubling often happens in the middle of the *Form*, and the reaſon is, becauſe the foreſide of the *Plattin* Prints beyond the middle of the *Form* at the firſt *Pull*, and the hindſide of the *Plattin* by the *Second Pull* reprints part of the *Firſt Pull*: So that a Spring in the *Tympan* removes the Paper in this interval of Time.

This fault is mended by exact obſerving the *Runing in* of the *Carriage.*

Doubling may alſo happen by the too looſe and flapping ſtraining of the *Tympan*, when it was firſt *Drawn.*

This cannot be mended without taking the *Tympan* off, and *Drawing* on a new one.

A *Preſs-man* having *Pull'd* a Sheet, may by ſome accident (either of Object or Diſcourſe) let it ly on the *Form*

Form after he has *Run-out* the *Carriage*, and afterwards forget it was *Pull'd*, yet may perhaps lift the *Tympan* a little off the *Form*, which lifting off (if the *Joynts* are not very good) will remove the Sheet, if then he *Pull* it again, it will *Double*.

This fault becauſe it is but an accident I ſhall paſs by, and only ſay,

If the *Joynts* are ſo faulty (as ſometimes Old *Joynts* are) that the *Preſs-man* cannot keep *Regiſter* with them, the Smith muſt make new or mend the Old.

9. When the *Preſs-man* leaves Work at Noon, he draws half the Nails out of the Balls, and takes the Wooll out: Then doubles the looſe half of the *Leather* over the remaining Nail'd-on half, with the *Incky ſides* of each half next each other, and Rowls up the *Leathers* cloſe, and laies them in a Bowl or Pan of Water to Soak till he has Din'd.

He alſo covers the *Form* with the *Tympan*, to keep it from duſt or filth that may fall on it: And takes out the *Blankets* and lays them on the *Heaps*: And with a *Spunge* Wet in Water beſprinkles the backſide of the *Tympan*, to Soak it whiles he is at Dinner.

Coming again to his Work afternoon, he takes the *Handles* of the *Ball-ſtocks* between his Thighs, (being ſeated as before, when he knockt up the *Balls*, ¶ 10.) to hold them faſt, and he takes the turn'd down backſides of the *Ball-leathers* in both his hands, (for the other ſide being all over Black, would black his Hands) and rubs them between his Fingers very well, to ſupple them. Then ſqueezes and Wrings the Water well out again; and *Teizes* his Wooll, by opening

opening all the hard and almoſt matted knots he finds in it: but he does not pull the Wooll or hardned knots in it aſſunder from the whole maſs of Wooll: But endeavours to keep the Wooll of each *Ball* intirely connected in the ſame maſs, and only opened, to Looſen and Soften it: For pulling the knots to pieces, would tear the Wooll, and ſoon make it unfit for uſe. Having *Teazed* the *Wooll* he *Knocks up* his *Balls* again, as I ſhewed in ¶ 10.

Then he goes to the *Tympan*, and ſqueezing his *Spunge* as dry as he can, he rubs it over the backſide of the *Tympan*, to Suck up the Water, that may lye on it.

Then taking the *Blankets*, he rubs them between both his Hands to ſoften them; for we muſt ſuppoſe that the Mornings *Pulling* on them has compacted and hardned them: being well Rub'd, he lays them in the *Tympan* again, as was ſhewed before in ¶ 7. and falls again to his Afternoons train of Work.

Having wrought all day, though his *Form* be not *Wrought off*, it may yet be *Foul*, ſo that he muſt *Waſh* it: Nay, in ſmall *Letter* a good *Preſs-man* will *Waſh* his *Form* twice a day: Wherefore he calls to the Boy to Heat the *Ly*, ſomewhat before he is ready for it, about a Heating time: And having a *Shooting-ſtick* lying by him on the *Till* or ſome other convenient place, drives every *Quoin* between the *Furniture* and the *Chaſe* faſt up; leaſt they may have ſomewhat ſhrunk, or elſe ſtarted back: Then with a piece of Chalk he makes a ſcore on the two farthermoſt *Corners* of the *Carriage*; and through the *Quoins* droven againſt them, and upon the two *Corners* of the

Carriage

Carriage of the *Tympan* and their *Quoins*, and lets the *Quoins* ly; but he *Unlocks* all the oppoſite *Quoins*, and takes them out of their places; laying thoſe *Quoins* that he takes from between the fore-end of the *Carriage* and the *Chaſe* on the hithermoſt upper long ſide of the *Plattin*, the hithermoſt *Quoin* on the hithermoſt ſide of the *Plattin*, and the farthermoſt *Quoin* on the farthermoſt ſide of the *Plattin*; with their ſmall ends towards him, and fromwards him as they lay on the *Carriage*. The *Quoins* that he takes from the hither ſide of the *Carriage*, he lays on the hithermoſt Return ſide or end of the *Plattin*; that on his Left Hand on the *Carriage*, towards the farther Corner of the *Plattin*, and that *Quoin* on the Right Hand on the *Carriage*, towards the hither corner of the *Plattin*, with their ſmall ends towards the Hand they lay on, on the *Carriage*.

Having taken out and placed theſe four *Quoins*, he tryes if the *Form* will *Riſe*, as was ſhewed § 22. ¶ 7. then takes up the *Form*, and carries it to the *Ly-Trough*, and lays it in it, even as the *Compoſiter* brought the *Form* to the *Preſs*, and laid it on the *Preſs-ſtone*. § 22. ¶ 7. and taking the *Ly Kettle*, or *Chafer*, in his Left Hand pours the *Ly* Scalding hot place by place over the whole *Form*: And then with the ends of the Hair of the *Ly Bruſh* rubs gently over the whole *Form*: And as he thus *Rubs* with his Right Hand Rocks the *Ly-Trough* a little on its Axis, that the Body of *Ly* may accompany the *Ly-Bruſh* in its progreſs from the hither to the farther ſide of the *Form*: And thus he *Waſhes* the *Form* ſtill on, till he perceive the *Face* of the *Letter* purely clean. Then

Plate 31

Then he lets the *Ly* out again into the *Ly-Kettle* at the Hole and Pipe in the Left Hand hither corner of the *Ly-Trough*: and ſtopping the hole again, ſets by the *Ly-Kettle*. Then with a Diſh or two of fair Water he *Rinces off* the Laver of the *Ly* that may ly on the *Face* of the *Letter*, and rears up the *Form* and throws a Diſhful or two of fair Water on the back-ſide of it, to *Rince* it alſo. Then takes the *Form* out of the *Ly-Trough*, and ſets it by, ſhelving with its *Face* againſt the Wall, to Dry.

If the *Heap* be *Wrought off*, he lets the *Compoſiter* know it, to take Charge of it.

Having *Wrought off* his *Heap*, he takes it off the *Paper-bench*, and ſets it by on the floor, covering it with a Waſte-ſheet: And gives notice to the Boy, or to the *Ware-houſe-keeper*, to fetch it away and *Hang it up* to Dry.

Then he draws the *Balls*, and takes the *Blankets* out of the *Tympan* (as at Noon:) And if he have Paper to *Wet*, *Wets* it as was ſhewed ¶ 9. of this §.

§ 25. *The Office of the* Warehouſe-keeper.

¶ 1. *Of* Hanging up *Paper*.

THe *Warehouſe-keeper* takes the *Heap* out of the *Preſs-room*, and carries it into the *Warehouſe*, or other *Drying-place*, and ſetting it upon a Form or Bench of convenient heighth, with an end of the *Heap* from him, he takes the *Handle* of the *Peel* in his Left Hand, and lays the *Board* flat down upon the *Heap*, with the Left Hand ſide of the *Board* towards

wards the Left Hand ſide of the *Heap*, and ſo as its upper edge may reach to almoſt three quarters of the length of the Sheet, and that the Right Hand end of the *Peel* may ly on the middle of the *Heap*: Then with his Right Hand he doubles over ſo much of the *Heap* as he thinks good, perhaps about a *Quire*, or half a *Quire*, or about ſeventeen Sheets, more or leſs, either as he can allow them time to *Dry*, or have room on his *Racks* to *Hang* them on. Having thus doubled his firſt *Doubling* on the *Heap*, he removes the Left Hand half of the *Peel* almoſt off the *Heap*, viz. to about two Inches within the Left Hand ſide of the *Heap*, and doubles, as before, a ſecond *Doubling* to hang over the firſt *Doubling*, towards the Left Hand about two Inches, as aforeſaid, on the *Peel*, and as near as he can gueſs, the ſame number of Sheets. And having theſe two *Doublings* on his *Peel*, he takes the *Peel* off the *Heap*, and holding the *Handle* a little aſlope, that the *Shorter Folding-over* of the Sheets may open from the *Peel*, he lifts it up, and places it at one end of his firſt *Rack*, and lets it hang on it, by drawing the *Peel* from under the Paper. In like manner he Loads and unloads his *Peel* again ſucceſſively, till he have *Hung up* the whole *Heap*. See Plate 31.

Note, that the ſides of the Sheets do not hang againſt one another, but lap over one another, as you may ſee by Plate 31. Nor are they *Hung up* to *Hang* with their edges againſt the ſide of the former *Hanging-up*, but to lap over, ſo as every Right Hand *Doubling* may lap about two Inches over the Left Hand *Doubling*; that when the *Books* are taken down, the

Plate 32.

the *Warehouſe-keeper* clapping the flat ſide of his *Peel* againſt the Right Hand edge of the Paper, ſlides ſeveral *Doublings* over one another (perhaps three or four:) And putting the *Peel* under them, takes them off the *Racks*, and lays them on the *Heap* again, on a clean Waſte Paper, and ſets the *Heap* orderly by, till it comes to be *Gather'd*.

The *Warehouſe-keeper* is alſo very careful to lay all the Sheets, ſo as the reſpective *Signatures* of every Sheet may ly exactly over the reſpective *Signature* of the firſt Sheet, leſt when the *Books* come to be *Gathered*, ſome Sheets may be *Turned*, which will give him a great deal of trouble to *Turn* them right when he *Colations* the *Books*.

¶ 2. *Of* Laying the Heaps.

Laying the Heaps is to place them on Benches or Forms of a convenient Heighth, in an orderly *Signatural* Succeſſion. By an orderly *Signatural* ſucceſſion, I mean the firſt *Signature*, which moſt commonly is A (and therefore ſhall be ſo accepted) be placed on the Left Hand of the Bench, with either the Side or Foot of the *Page*, as the *Volumn* requires, that hath the ſingle *Signature* A at the bottom of it upwards, and towards the hither ſide of the Bench. On the Right Hand ſide of the *Heap* A is B, and next it C, in like order D E F, *&c.*

¶ 3. *Of*

¶ 3. *Of* Gathering of Books.

Gathering of Books is to take one Sheet off every *Heap*, beginning at the laſt *Heap* firſt, *viz.* at the Left Hand end of the Range. The *Gatherer* takes it off with his Right Hand, and diſpoſes the hither end of the Sheet into his Left Hand, clapping his Left Hand Thumb upon the middle of the Sheet, to hold it faſt. Then he takes a ſecond Sheet off the ſecond *Heap* from the Left Hand, *viz.* towards the Right; and lays the ſecond Sheet on the firſt, and ſo ſucceſſively a third, a fourth, a fifth, *&c.* till he has *Gathered* the laſt Sheet on his Right Hand; ſtill obſerving to lay the middle of each Sheet under his Thumb, and all the ſingle *Signatures* on each Sheet orderly and ſucceſſively on one another.

Thus he *Gathers* on, till one of all the *Heaps Comes off*; which when it does, he Doubles or Quires up all the other *Heaps*, and lays them by till he can *Bundle* and Tye them up; which when he has alſo done, he writes upon them *Imperfections* of (the *Title* of the *Book*) and Writes on it the *Signature* of the Sheet that is Wanting, and ſets it by in a convenient place of the *Warehouſe*, that he may have recourſe to it on any occaſion.

Though I ſhewed how he *Gathered* the *Books*, yet ſhewed not how he *Knocks them up* and *Folds* them: Wherefore,

Having thus *Gathered* one *Book*, he *Knocks it up*, that is, he carries it to a Table provided on purpoſe

poſe near him; and taking the ends of the *Book* between the two Bows of the Thumb and Fore-finger of each Hand, he graſps the ends looſly between them, and placing the hither long ſide or edge of the *Book* on the plain of the Table, he lifts the whole *Book* a little above the plain of the Table, (about an Inch or two, more or leſs) and while the whole *Book* is held looſly by its ends, lets it fall gently down on the Table, that the edges of ſuch Sheets as may ſtand out, or lower than the reſt, may be drove even with the reſt of the edges of the *Book*, and alſo that the edges of ſuch Sheets as may lye above the edges of the *Book* may be joulted downwards, and lye even in the ſame Range with the reſt of the edges.

And as he is *Knocking up* the lower edge of the *Book*, he at the ſame time evens the two ends of the *Book*, by thruſting the Bows of his Thumbs and Fingers againſt the ends of the *Book*, which being looſely graſp'd, and the Bows of his Thumbs and Fingers bearing pretty ſtiff towards each other; will drive in the ends of ſuch Sheets as may ſtick out at either end; and ſo even the ends of the *Book* at the ſame time.

Having thus even'd all the edges, he lays the *Book* flat down on the Table, and holding one end of it ſtiff and tight in his Left Hand, he rubs the whole flat of his Right Hand hard upon the upper Sheet, to preſs it and all the other Sheets as cloſe together as he can; then takes it up, and gives the edges another or two gentle *Knocks*, as before; and then *Folds up*, or *Doubles* the *Book*, according to its reſpective *Volumn*.

If

If it be *Folio*, *Quarto*, *Octavo* or *Sixteens*, he *Folds* it in the *Short Cross*; but if it be *Twelves*, *Eighteens*, *Twenty-fours*, he *Folds* it in the *Long Cross*.

But most times before he *Folds* the *Books* he will *Colation* them: (as shall be shewed by and by:) therefore having *Gathered* the *Book*, he lays it by on a Sheet of Waste Paper, and *Gathers* a second *Book* as he did the first, and lays that flat open on the first, then *Gathers* a third, fourth, fifth *Book*, *&c.* as before, and lays them successively on each other, till he have raised an *Heap* of *Books* so high, that he grows cautious of laying more on, lest its heighth should exceed his management. Then *Gathers* on, and raises another *Heap* or *Heaps* till one of the *Signatures* comes off.

¶ 4. *Of* Colationing Books.

The *Colationing of Books*, is,

First, To examine whether the whole number of Sheets that belong to a *Book* are *Gathered* in the *Book*.

Secondly, To examine that two Sheets of one sort are not *Gathered*.

Thirdly, To examine whether the proper *Signature* of every Sheet lye on its proper corner of the *Gathered Book*.

To do this, The *Colationer* provides himself with a *Bodkin*; which is nothing else than a pretty thick Sowing Needle, (most commonly broken-eyed,) having its thick end thrust fast into a round piece of Wood, about the thickness of a Tobacco-Pipe, and about three or four Inches long.

Now

Now having the *Heap* of *Gathered Books* before him, with the ſingle *Signature* A lying upwards on his Right Hand, and his Left Arm croſs the *Heap*, and his Hand near the *Signature* corner, with his *Bodkin* in his Right Hand, he pricks up the corner of the firſt Sheet A, and at the ſame moment he pricks it up, ſlips the Balls of his two Fore-fingers of his Left Hand, and ſecures it from falling back again on the *Gathered Heap* of *Books* between his Thumb and hinder Joynt of his Fore-finger, and immediately pricks into the Sheet B, caſting his Eye upon the *Signature*, as well to ſee that it is B, as to ſee that it is ſingly B, and not B 2, B 3, *&c.* For if the ſingle *Signature* lye not on the ſame corner of the *Heap*, the Sheet muſt be turned till it do. In like manner he picks up and receives C D, *&c.* ſtill caſting his Eye that it be the right *Letter*, and ſingle *Signature*, as aforeſaid.

If he finds two Sheets of the ſame *Signature*, he takes one out and lays it by, or elſe on the *Heap*, if they be not all *Gathered.*

If he finds one Sheet wanting, he fetches that Sheet from the *Heap*; or if he want it at the *Heap* the *Book* is laid by as *Unperfect* till he have *Colationed* the whole *Impreſſion* of *Books*, to ſee if he can make it *Perfect* with ſome other *Book*, that may have two of the ſame Sheets *Gathered* in it.

Having examined that his *Book* is *Perfect*, he *Knocks* and *Folds it up*, as was ſhewed in the laſt ¶.

Having *Gathered*, *Colationed* and *Folded* theſe *Books*, he *Tells* them, to ſee how the *Impreſſion Holds out*; and as he *Tells* them, he lays a ſet number of

Books

Books (if the *Books* be *Thick*, five, if Thinner, Ten, if very Thin, twenty five or fifty) with the *Folded Side* or *Back* one way, and the same *Number* of *Books*, with the *Folded* or *Back-side* the other way, *viz.* the edges of the latter number of *Books* upon the *Backs* of the former *Number*: As well to distinguish and Count the *Number* of *Books* readily, as to keep the Bundle in a flat and Horizontal position. For if the *Backs* of the *Quired Books* in a Bundle, should lye all one way, the *Fold* of the *Back* being more or less hollow in the middle of each *Book*, will in a *Number* of *Books*, by springing upwards, mount the *Backs*; and consequently the edges of the *Books* in the *Bundle* will be depressed, so that in a great *Bundle* the *Books* will be subject to slide off one another.

These *Books* being thus Counted, he sets them by on Waste Paper in convenient Piles, *viz.* Piles of about three or four Reams high (according as the Paper may be thicker or thinner) he sets them by (I say) in Piles of equal Numbers, Range by Range, till the whole *Impression* is set by.

And before he Tyes them up, he puts them into the *Standing Press*, placing in it so many *Books* as the *Press* will hold, both in width and Heighth; observing to set in every *Pile* he puts Range by Range into the *Press*, an equal number of *Books*, that each *Pile* may equally feel the force of the Screw.

Then with a strong Iron Bar he turns about the *Spindle* as oft he can, with his main Strength to Squeeze and *Press* the *Books* as close and tight as he can together: and so lets them stand in *Press* about a Day

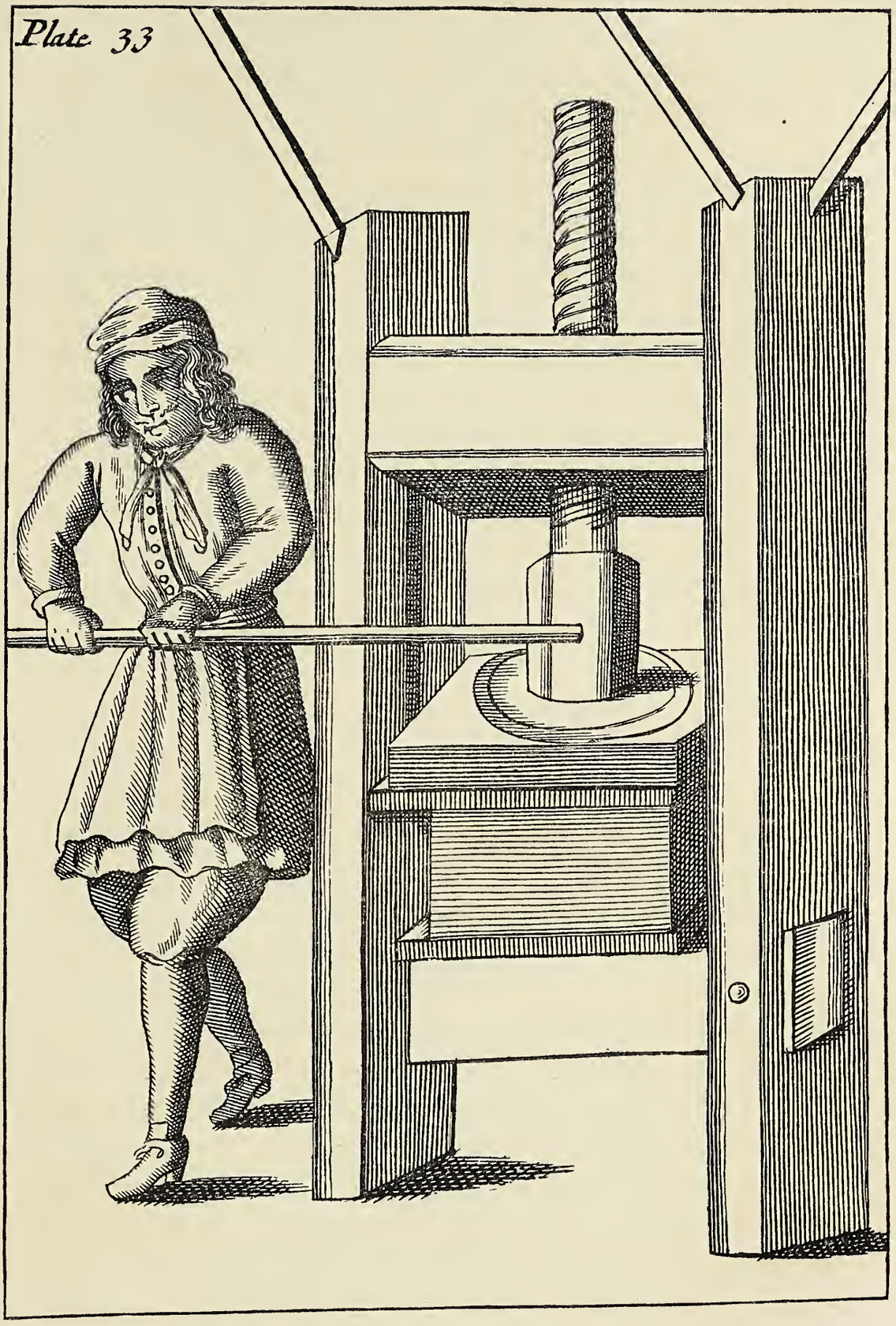


Plate 33

a Day and a Night. Then takes them out, and in like manner puts in more *Books*, till the whole Impreſſion is *Preſt*. See Plate 32.

As he takes each number of *Books*, he Tyes them up with Packthred, lays a Waſte Paper under and upon each *Bundle*; and if the *Maſter-Printer* Printed the *Impreſſion* for Himſelf, he writes the *Title* of the *Book*, and number of the *Books* on the uppermoſt Waſte Paper, and ſets them by ſquare and orderly on the Shelves in the *Warehouſe*, to deliver them out according to the *Maſter-Printers* order. But if the *Impreſſion* were Printed for an Author, or a Book-ſeller, he ſends them to the Authors or Book-ſellers, without writing on the uppermoſt Waſte Paper.

¶ 5. *Of* Setting out *Paper, and* Culling *the* Cording Quires.

Each Ream of Paper contains twenty Quires: Theſe twenty Quires are by the Paper-makers ſo diſpoſed that the Back or Doubling of each Quire lyes upon the opening or edges of the next Quire: For reaſons given in the laſt ¶.

Two of the twenty Quires in a Ream are called *Cording Quires*, viz. the two *Out-ſide Quires*; becauſe the whole Ream is Corded or Tyed up between them. They are alſo called *Caſſie Quires*, becauſe they ſerve for Caſes to the Ream. Theſe Quires are by the Paper-maker made up of torn, wrinckled, ſtained, and otherwiſe naughty Sheets; yet does not perhaps the whole Quire conſiſt of ſuch Sheets, but commonly ſome

ſome good Sheets are in *Culling* found among them, as ſhall be farther ſhewed by and by.

The *Warehouſe-keeper* therefore when he *Sets out* Paper, lays by the uppermoſt *Cording Quire*, and then nimbly ſnatches with his Right Hand at the back of the next Quire, and if the back lys towards him, draws it into his Left Hand with the edges of the Quire towards his Fingers; but if the back lye from him, nimbly turns it while it is coming to his Left Hand, and ſo again nimbly ſnatches at the back of the ſucceeding Quires, placing their backs all one way on the Firſt Quire in his Left Hand, till he have Counted or taken off of the Ream a *Token*; which *Token*, if it be ſet out for *Half* a *Preſs*, viz. a *Single Preſsman*, is generally but five Quires, and is indeed often called *Half* a *Token*: But if it be for an *Whole Preſs*, it contains Ten Quires. This *Token* he lays by near him, upon a Waſte Sheet of Paper, and again applies himſelf to *Set out* the next *Token* in the ſame manner, but lays the next *Token* with the backs of the Quires over the edges of the former *Token*, and thus *Sets out* ſo many *Tokens* as his *Heap* requires, yet always conſiders how his Paper *Holds out*, whether five and twenties, or but four and twenties: If it *Holds out* five and twenties, he *Sets out* in every Fourth, Fifth, or Sixth *Token* Eleven Quires, to ſecure the *Impreſſion* to *Hold out*. If but four and twenties, he *Sets out* Eleven Quires, in every ſecond *Token*, and at laſt a Quire more to the whole *Heap* to make good the wanting Sheets of every Quire, and to make *Proves*, *Reviſes*, *Regiſter-Sheets*, *Tympan-Sheets*, and to ſupply other accidents that may happen at the *Preſs*, either

either by naughty Sheets, or Faults committed in *Beating*, *Pulling*, *Bad Regiſter*, &c. for all or any of theſe accidents that happens to a Sheet, the *Preſs-man* doubles it, and lays by in the *Heap* as Waſte, as I ſhewed § 24. ¶ 18. (4) and ſtill he remembers, as aforeſaid to lay by the two *out-ſide Quires* of every Ream; and at laſt lays on the *Heap* another Waſte Sheet of Paper, and ſo brings it to the *Preſs* to be *Wet*.

The *Culling the Cording Quires*, is, to examine every Sheet one by one. To do it, he lays the *Cording Quires*, or many *Cording Quires* open before him againſt the Light, and takes up every Sheet ſucceſſively and obſerves the goodneſs of it: Such Sheets as he finds good, he lays on his Right Hand, and the Bad on his Left. If a Sheet have but a little corner torn off, *viz.* ſo much as he judges the *Book-binder* would take off with his *Plow*, to make the *Leaf* ſquare with other *Leaves*, he accounts that a good Sheet: But if more be torn off, he lays it by for Bad; and ſo he does Wrinckled and ſtain'd Sheets.

Having thus *Cull'd* all the *Cording Quires*, he tells out the good Paper into Quires, allowing five and twenty to the Quire, if the Quires of the Ream hold out five and twenty; or elſe but into four and twenty. And the good Paper thus *Cull'd*, he tells into an *Heap* or *Heaps*, as far as it will go.

But yet the careful *Warehouſe-keeper* will not give the *Preſs-man* this *Culd* Paper to Print at the begining or end of a *Book*, but diſpoſes that *Heap* or *Heaps* ſo as they may be uſed about the middle of the *Book*: For though we call'd it good Paper, yet it very rare-

ly

ly happens to be ſo beautiful as the *Inſide Quires.*

The Bad Paper he alſo *Tells out* into Quires, but allows no more than four and twenty Sheets to the Quire, becauſe it is commonly ſet by in the *Warehouſe* to be ſold.

It is alſo the Office of the *Warehouſe-keeper* to keep a Day Book, and in it to ſet down what Books he Sells, and for how much, and to whom, and whom by order of the *Maſter-Printer* he Truſts with Books, and for how long Time; that ſo the *Maſter-Printer* may as oft as he pleaſes have an account how the *Impreſſion*, or part of it, is diſpoſed of.

(*As an Appendix.*) *Ancient Cuſtoms uſed in a* Printing-houſe.

EVery *Printing-houſe* is by the Cuſtom of Time out of mind, called a *Chappel*; and all the Workmen that belong to it are *Members of the Chappel*: and the Oldeſt Freeman is *Father of the Chappel.* I ſuppoſe the ſtile was originally conferred upon it by the courteſie of ſome great Churchman, or men, (doubtleſs when Chappels were in more veneration than of late years they have been here in *England*) who for the Books of Divinity that proceeded from a *Printing-houſe*, gave it the Reverend Title of *Chappel.*

There have been formerly Cuſtoms and By-Laws made and intended for the well and good Government of the *Chappel*, and for the more Civil and orderly deportment of all its Members while in the *Chappel*; and the Penalty for the breach of any of theſe

theſe Laws and Cuſtoms is in Printers Language called a *Solace*.

And the Judges of theſe *Solaces*, and other Controverſies relating to the *Chappel*, or any of its Members, was plurality of Votes in the *Chappel*. It being aſſerted as a Maxim, *That the Chappel cannot Err*. But when any Controverſie is thus decided, it always ends in the Good of the *Chappel*.

1. Swearing in the *Chappel*, a *Solace*.
2. Fighting in the *Chappel*, a *Solace*.
3. Abuſive Language, or giving the Ly in the *Chappel*, a *Solace*.
4. To be Drunk in the *Chappel*, a *Solace*.
5. For any of the Workmen to leave his Candle burning at Night, a *Solace*.
6. If the *Compoſiter* let fall his *Compoſing-ſtick*, and another take it up, a *Solace*.
7. Three *Letters* and a *Space* to lye under the *Compoſiters Caſe*, a *Solace*.
8. If a *Preſs-man* let fall his *Ball* or *Balls*, and another take it up, a *Solace*.
9. If a *Preſs-man* leave his *Blankets* in the *Tympan* at Noon or Night, a *Solace*.

Theſe *Solaces* were to be bought off, for the good of the *Chappel*: Nor were the price of theſe *Solaces* alike: For ſome were 12 *d.* 6 *d.* 4 *d.* 2 *d.* 1 *d. ob.* according to the nature and quality of the *Solace*.

But if the Delinquent prov'd Obſtinate or Refractory, and would not pay his *Solace* at the Price of the *Chappel*; they *Solac'd* him.

The manner of *Solacing*, thus.

The Workmen take him by force, and lay him on his

his Belly athwart the *Correcting-ſtone*, and held him there while another of the Work-men, with a Paper-board, gave him 10 *l. and a Purſe*, viz. Eleven blows on his Buttocks; which he laid on according to his own mercy. For Tradition tells us, that about 50 years ago one was *Solaced* with ſo much violence, that he preſently Piſſed Blood, and ſhortly after dyed of it.

Theſe nine *Solaces* were all the *Solaces* uſually and generally accepted: yet in ſome particular *Chappels* the *Work-men* did by conſent make other *Solaces*, viz.

That it ſhould be a *Solace* for any of the Work-men to mention Joyning their Penny or more apiece to ſend for Drink.

To mention ſpending *Chappel-money* till *Saturday* Night, or any other before agreed time.

To Play at *Quadrats*, or excite any of the *Chappel* to Play at *Quadrats*; either for Money or Drink.

This *Solace* is generally Purchas'd by the Maſter-Printer; as well becauſe it hinders the Workmens work, as becauſe it Batters and ſpoils the *Quadrats*: For the manner how they Play with them is Thus: They take five or ſeven more m *Quadrats* (generally of the *Engliſh Body*) and holding their Hand below the Surface of the *Correcting Stone*, ſhake them in their Hand, and toſs them up upon the *Stone*, and then count how many *Nicks* upwards each man throws in three times, or any other number of times agreed on: And he that throws moſt Wins the Bett of all the reſt, and ſtands out free, till the reſt have try'd who throws feweſt *Nicks* upwards in ſo many throws; for all the reſt are free: and he pays the Bett.

For

For any to *Take up a Sheet*, if he receiv'd *Copy-money*; Or if he receiv'd no *Copy-money*, and did *Take up a Sheet*, and carryed that Sheet or Sheets off the Printing-Houſe till the whole Book was Printed off and Publiſht.

Any of the Workmen may purchaſe a *Solace* for any trivial matter, if the reſt of the *Chappel* conſent to it. As if any of the Workmen Sing in the *Chappel*; he that is offended at it may, with the *Chappels* Conſent purchaſe a penny or two penny *Solace* for any Workmans ſinging after the *Solace* is made; Or if a Workman or a Stranger ſalute a Woman in the *Chappel*, after the making of the *Solace*, it is a *Solace* of ſuch a Value as is agreed on.

The price of all *Solaces* to be purchaſed is wholly Arbitrary in the *Chappel*. And a Penny *Solace* may perhaps coſt the Purchaſer Six Pence, Twelve Pence, or more for the *Good of the Chappel*.

Yet ſometimes *Solaces* may coſt double the Purchaſe or more. As if ſome *Compoſiter* have (to affront a *Preſs-man*) put a Wiſp of Hay in the *Preſsmans Ball-Racks*; If the *Preſs-man* cannot well brook this affront, he will lay ſix Pence down on the *Correcting Stone* to purchaſe a *Solace* of twelve Pence upon him that did it; and the *Chappel* cannot in Juſtice refuſe to grant it: becauſe it tends to the *Good of the Chappel*: And being granted, it becomes every Members duty to make what diſcovery he can: becauſe it tends to the farther *Good of the Chappel*: And by this means it ſeldom happens but the Agreſſor is found out.

Nor did *Solaces* reach only the *Members of the Chap-*

Chappel, but alſo Strangers that came into the *Chappel*, and offered affronts or indignities to the *Chappel*, or any of its Members; the *Chappel* would determine it a *Solace*. Example,

It was a *Solace* for any to come to the *Kings Printing-houſe* and ask for a Ballad.

For any to come and enquire of a *Compoſiter*, whether he had News of ſuch a Galley at Sea.

For any to bring a Wiſp of Hay, directed to any of the *Preſs-men*.

And ſuch Strangers were commonly ſent by ſome who knew the *Cuſtoms of the Chappel*, and had a mind to put a Trick upon the Stranger.

Other Cuſtoms were uſed in the *Chappel*, which were not *Solaces*, viz. Every new Workman to pay half a Crown; which is called his *Benvenue*: This *Benvenue* being ſo conſtant a Cuſtome is ſtill lookt upon by all Workmen as the undoubted Right of the *Chappel*, and therefore never diſputed; yet he who has not paid his *Benvenue* is no Member of the *Chappel*, nor enjoys any benefit of *Chappel-Money*.

If a Journey-man Wrought formerly upon the ſame Printing Houſe, and comes again to Work on it, pays but half a *Benvenue*.

If a Journey-man *Smout* more or leſs on another Printing Houſe, and any of the *Chappel* can prove it, he pays half a *Benvenue*.

I told you before that abuſive Language or giving the Lye was a *Solace*: But if in diſcourſe, when any of the Workmen affirm any thing that is not believed, the *Compoſiter* knocks with the back corner of his *Compoſing-ſtick* againſt the lower Ledge of his *Lower Caſe*,

Caſe, and the *Preſs-man* knocks the Handles of his *Ball-ſtocks* together: Thereby ſignifying the diſcredit they give to his Story.

It is now cuſtomary that Journey-men are paid for all Church Holy days that fall not on a *Sunday*, Whether they Work or no: And they are by Contract with the Maſter Printer paid proportionably for what they undertake to Earn every Working day, be it half a Crown, two Shillings, three Shillings, four Shillings, *&c.*

It is alſo cuſtomary for all the Journey-men to make every Year new Paper Windows, whether the old will ſerve again or no; Becauſe that day they make them, the Maſter Printer gives them a *Way-gooſe*; that is, he makes them a good Feaſt, and not only entertains them at his own Houſe, but beſides, gives them Money to ſpend at the Ale-houſe or Tavern at Night; And to this Feaſt, they invite the *Corrector*, *Founder*, *Smith*, *Joyner*, and *Inck-maker*, who all of them ſeverally (except the *Corrector* in his own Civility) open their Purſe-ſtrings and add their Benevolence (which Workmen account their duty, becauſe they generally chuſe theſe Workmen) to the Maſter Printers: But from the *Corrector* they expect nothing, becauſe the Maſter Printer chuſing him, the Workmen can do him no kindneſs.

Theſe *Way-gooſes*, are always kept about *Bartholomew-tide*. And till the Maſter-Printer have given this *Way-gooſe*, the Journey-men do not uſe to Work by Candle Light.

If a Journey-man marry, he pays half a Crown to the *Chappel*.

When

When his Wife comes to the *Chappel*, she pays six Pence: and then all the Journey-men joyn their two Pence apiece to Welcome her.

If a Journey-man have a Son born, he pays one Shilling.

If a Daughter born, six Pence.

The *Father* of the *Chappel* drinks first of *Chappel Drink*, except some other Journey-man have a *Token*; viz. Some agreed piece of Coin or Mettle markt by consent of the *Chappel*: for then producing that *Token*, he Drinks first. This *Token* is always given to him who in the Round should have Drank, had the last *Chappel-drink* held out. Therefore when *Chappel-drink comes in*, they generally say, *Who has the Token?*

Though these Customs are no *Solaces*; yet the *Chappel* Excommunicates the delinquent; and he shall have no benefit of *Chappel-money* till he have paid.

It is also Customary in some Printing-houses that if the *Compositer* or *Press-man* make either the other stand still through the neglect of their contracted Task, that then he who neglected, shall pay him that stands still as much as if he had Wrought.

The *Compositers* are Jocosely call'd *Galley Slaves*: Because allusively they are as it were bound to their *Gallies*.

And the *Press-men* are Jocosely call'd *Horses*: Because of the hard Labour they go through all day long.

An Apprentice when he is Bound pays half a Crown to the *Chappel*, and when he is made Free, another half Crown to the *Chappel*; but is yet no Member of the *Chappel*; And if he continue to Work

Work Journey-work in the ſame Houſe, he pays another half Crown, and is then a Member of the *Chappel.*

A *Founding-Houſe* is alſo call'd a *Chappel*: But I ſuppoſe the Title was originally aſſum'd by *Founders*, to make a Competition with *Printers.*

The Cuſtomes uſed in a *Founding-Houſe* are made as near as may be to thoſe of a *Printing-houſe*: but becauſe the Matter they Work on, and the manner of their Working is different, therefore ſuch different Cuſtomes are in Uſe, as are ſuitable to their Trade, As

Firſt, To call *Mettle* Lead, a Forfeiture.

Secondly, A Workman to let fall his *Mold*, a Forfeiture.

Thirdly, A Workman to leave his Ladle in the *Mettle* Noon or Night, a Forfeiture.

The Printers of *London*, Maſters and Journey-men have every Year a general Feaſt, which ſince the re-building of *Stationers Hall* is commonly kept there. This Feaſt is made by four Stewards, *viz.* two Maſters and two Journey-men; which Stewards, with the Collection of half a Crown apiece of every Gueſt, defray the Charges of the whole Feaſt; And as they Collect the Half-Crowns, they deliver every Gueſt a Ticket, wherein is ſpecified the Time and Place they are to meet at, and the Church they are to go to: To which Ticket is affixed the Names and Seals of each Steward.

It is commonly kept on or about *May-day*: When, about ten a Clock in the Morning they meet at *Stationers Hall*, and from thence go to ſome Church thereabouts; Four Whifflers (as Servitures) by two

and

and two walking before with White Staves in their Hands, and Red and Blew Ribbons hung Belt-wise upon their left Shoulders. These go before to make way for the Company. Then walks the Beadle of the Company of *Stationers*, with the Companys Staff in his Hand, and Ribbons as the Whifflers, and after him the Divine (whom the Stewards before ingag'd to Preach them a Sermon) and his Reader. Then the Stewards walk by two and two, with long White Wands in their Hands, and all the rest of the Company follows, till they enter the Church.

Then Divine Service begins, Anthems are Sung, and a Sermon Preached to suit the Solemnity: Which ended, they in the same order walk back again to *Stationers Hall*; where they are immediately entertain'd with the City Weights and other Musick: And as every Guest enters, he delivers his Ticket (which gives him Admittance) to a Person appointed by the Stewards to receive it.

The Master, Wardens and other Grandees of the Company (although perhaps no Printers) are yet commonly invited, and take their Seats at the upper Table, and the rest of the Company where it pleases them best. The Tables being furnish'd with variety of Dishes of the best Cheer: And to make the entertainment more splendid is Usher'd in with Loud Musick. And after Grace is said (commonly by the Minister that Preach'd the Sermon) every one Feasts himself with what he likes Best; whiles the Whifflers and other Officers Wait with Napkins, Plates, Beer, Ale, and Wine, of all sorts, to accommodate each Guest according to his desire. And to make

make their Cheer go cheerfuller down, are entertained with Muſick and Songs all Dinner time.

Dinner being near ended, the Kings and the Dukes Healths is begun, by the ſeveral Stewards at the ſeveral Tables, and goes orderly round to all the Gueſts.

And whiles theſe Healths are Drinking, each Steward ſets a Plate on each Table, beginning at the upper end, and conveying it downwards, to Collect the Benevolence of Charitable minds towards the relief of *Prinners* Poor Widows. And at the ſame time each Steward deſtributes a Catalogue of ſuch Printers as have held Stewards ever ſince the Feaſt was firſt kept, *viz.* from the Year of Chriſt 1621.

After Dinner, and Grace ſaid, the Ceremony of Electing new Stewards for the next Year begins: Therefore the preſent Stewards withdraw into another Room: And put Garlands of Green Lawrel, or of Box on their Heads, and White-wands in their Hands, and are again Uſher'd out of the withdrawing Room by the Beadle of the Company, with the Companys Staff in his Hand, and with Muſick ſounding before them: Then follows one of the Whifflers with a great Bowl of White-wine and Sugar in his Right Hand, and his Whifflers Staff in his Left: Then follows the Eldeſt Steward, and then another Whiffler, as the firſt, with a Bowl of White-wine and Sugar before the ſecond Steward, and in like manner another Whiffler before the Third, and another before the Fourth. And thus they walk with Muſick ſounding before them three times round the Hall: And in a fourth round the firſt Steward takes the

the Bowl of his Whiffler and Drinks to one (whom before he reſolved on) by the Title of Mr. Steward Elect: And taking the Garland off his own Head puts it upon the Steward Elects Head. At which Ceremony the Spectators clap their Hands, and ſuch as ſtand on the Tables or Benches, ſo Drum with their Feet that the whole Hall is filled with Noiſe, as applauding the Choice. Then the preſent Steward takes out the Steward Elect, giving him the Right Hand, and walks with him Hand in Hand, behind the three preſent Stewards another Round about the Hall: And in the next Round, as aforeſaid, the ſecond Steward Drinks to another with the ſame Ceremony as the firſt did; and ſo the Third Steward, and ſo the Fourth, and then all walk one Round more Hand in Hand about the Hall, that the Company may take notice of the Stewards Elect. And ſo ends the Ceremony of the Day.

This Ceremony being over, ſuch as will go their ways; but others that ſtay, are Diverted with Muſick, Songs, Dancing, Farcing, *&c.* till at laſt they all find it time to depart.

A

DICTIONARY,

Alphabetically explaining the abſtruſe VVords and Phraſes that are uſed in Typography. VVhich alſo may ſerve as an Index to direct to the moſt material Concerns contained in this Volumn.

THough I give you a Dictionary of ſo many Words and Phraſes as are mentioned in theſe *Exerciſes*, yet I do not exhibit this as a *Dictionary* ſo perfect, that all the obſtruce Words and Phraſes uſed among *Printers*, *Letter-cutters* and *Founders* are here expoſed; for Words and Phraſes many times offer themſelves either as Diſcourſe or Contemplation occurs: Therefore ſuch Words and Phraſes as have eſcaped my Conſideration, will, I hope, be diſcovered by ſome Printer, or others, that may have a kindneſs for Poſterity; not only in this Trade, but in all Trades and Faculties whatſoever: That ſo a *Dictionary* may in time be compleated, that may render ſo great a number of Words uſed in *England* by *Engliſh-men* intelligible; which now for want of a proper Repoſitory to ſtore them in, ſeem not only Aliens to our Nation, but barbarous to our Underſtandings.

A *Abre-*

A

Abreviations are Characters, or elſe marks on *Letters*, to ſignifie either a Word or Syllable. & is the Character for And, ^{e} is The abreviated, ^{t} is That abreviated; and ſeveral other ſuch. Straight ſtroaks over any of the Vowels abreviates m or n. They have been much uſed by Printers in Old Times, to *Shorten* or *Get in Matter*; but now are wholly left off as obſolete.

Accented Letters are much uſed in *Latin* Authors, and more in *Greek*. The Vowels are only accented, and are called *Grave*, thus accented à; *Acute*, thus accented á; *Circumflex*, thus accented â; and *Deerecis*, thus accented ä.

Accents are Daſhes or Marks over the Vowels.

Air-hole. See § 18. ¶ 1.

Aſcending Gage. See § 12. ¶ 5.

Aſhes. *Letter-Founders* call the *Skimmings* of their *Mettle*, and the Sweepings of their Houſe *Aſhes*; and ſave both, to ſend to the Refiners; who with their fierce Fire draw all the *Mettle* out of the *Aſhes*. See *Fat Aſhes*. See *Lean Aſhes*.

Aſh-hole. See § 18. ¶ 1.

Aſſidue is Thin Braſs Plate, ſuch as adorns *Bartholomew*-Fair Hobby Horſes: *Founders* uſe it to *Underlay* the *Body*, or the *Mouth-piece*, *&c.* of their *Mold*, if it be too Thin. See § 16.

B

Back of a Compoſing-ſtick. See § 9. ¶ 4.

Backſide of the Form is the underſide that touches upon the *Correcting-ſtone* or *Preſs-ſtone*.

Bad Copy. See § 24. ¶ 4.

Bad

Bad work. Any Fault at the *Caſe*, or *Preſs*, or at the *Furnace*, or at the *Dreſſing-block*, &c. is in Workmens Language called *Bad Work.*

Bake. See § 22. ¶ 10.

Balls. See § 24. ¶ 10.

Ball-knife. An old blunt-edg'd Knife, that *Preſsmen* lay by, to ſcrape their *Balls* with.

Ball-leathers. See § 24. ¶ 10.

Ball-Nails. The *Nails* that *Ball-leathers* are Tackt to the *Ball-ſtocks* with.

Ball-ſtocks. See § 11. ¶ 21.

Balls Take. See § 11. ¶ 21.

Beak. See § 12. ¶ 2.

Beam. See § 12. ¶ 4.

Beard of a Letter, is the outer angle of the Square Shoulder of the *Shank*, which reaches almoſt up to the *Face* of the *Letter*; and is commonly ſcraped off by the *Founder*: As in § 2. ¶ 2.

Beard-Gage. See § 13. ¶ 4.

Bearer. See § 4. & § 24. ¶ 7.

Beat. See § 24. ¶ 13.

Beat Fat. If a *Preſs-man Takes* too much *Inck* with his *Balls*, he *Beats Fat.* The *Black Engliſh Faced Letter* is generally *Beaten Fat.*

Beat Lean, is to *Take* but little *Inck*, and often: All *Small Letter* muſt be *Beaten Lean.*

Bed. See § 24. ¶ 2.

Benvenue. See Ancient Cuſtoms.

Bite. See § 24. ¶ 7.

Blankets. Woollen Cloath, or White Bays, to lay between the *Tympans.*

Blocks. See § 20. ¶ 3.

Block-Groove. ibid.

Body. See § 1. ¶ 2. & § 15. ¶ 1.
Botching Matrices. See § 17. ¶ 3.
Bottom line. See § 14. ¶ 2.
Bottom of the Matrice. See §. 17. ¶ 1.
Bottom Plate. See §. 15. ¶ 1.
Bow. See § 15. ¶ 1.

Brace, is a Character *Caſt* in *Mettle* thus marked ⁀ The *Compoſiter* is to have theſe *Caſt* of ſeveral Breadths, viz. to ſeveral numbers of *Lines* of a deſigned *Body* (moſt commonly of *Pica Body*) that they may hook in or Brace ſo many *Lines* as his *Copy* may ſhew him; as at *Charge* is a Brace of four *Lines.* See alſo § 24. ¶ 1.

Braſs-Rules. See § 2. ¶ 2.

Brayer is a round *Wooden Rubber,* almoſt of the faſhion of a *Ball-ſtock,* but flat at the bottom, and not above three Inches Diameter: It is uſed in the *Inck-Block* to *Bray* or *Rub Inck.*

Break, a piece of a *Line.* Alſo the *Mettle* that is contiguous to the *Shank* of a *New Caſt Letter*: This *Break* is formed in the *Mouth-piece* of the *Letter-mould,* and is called a *Break,* becauſe it is always broke from the *Shank* of a *Letter.*

Breaking off is breaking the *Break* from the *Shank* of the *Letter.* See § 19. ¶ 3.

Brevier. See § 2. ¶ 2.

Broad-ſide, a *Form* of one full *Page,* Printed on one ſide of a whole Sheet of Paper.

Broken Letter. By broken *Letter* is not meant the breaking of the *Shanks* of any of the *Letters,* but the breaking the orderly Succeſſion the *Letters* ſtood in in a *Line, Page,* or *Form,* &c. and mingling the *Letters*

ters together, which mingled *Letters* is called *Py.*

Bur. See *Rag.*

C

Cannon. See § 2. ¶ 2.

Card. When ſeveral *Bodies* of *Letter* are *Set* in a *Page*, *Compoſiters* to *Juſtifie* that *Page* to an exact Length, put a *Card* to ſome *White-line*, or other *Break* and Lengthen out the *Page* the thickneſs of a *Card.* And *Preſs-men* alſo uſe a *Card* for an underlay. See § 22. ¶ 4. &c. § 24. ¶ 7.

Cards. About a Quire of Paper, which *Preſs-men* uſe to *Pull* down the Spring or riſing of a *Form*, which it is many times ſubject to by hard *Locking-up.* See § 24. ¶ 4.

Carriage, is a part of the *Preſs.* For which See § 10. ¶ 9. It is alſo a part of the *Letter-Mold*: For which See § 15. ¶ 3.

Caſe. See § 3.

Caſe lies. See § 22. ¶ 1.

Caſe is full, viz. a *Caſe* full of *Letter*, wanting no Sorts.

Caſe is Low. When a *Caſe* grows empty, *Compoſiters* ſay the *Caſe is Low.*

Caſe Stands ſtill. When the *Compoſiter* is not at Work at his *Caſe*, it is ſaid, *The Caſe ſtands ſtill.*

Caſſie Paper. See § 25. ¶ 5.

Caſt, is to *Caſt Letter.* See § 19. ¶ 1.

Caſt off Copy. See § 22. ¶ 9.

Catch of the Bar. See § 11. ¶ 11.

Chappel. See Cuſtoms.

Charge,

Charge, is to fill { *Paper* with great *Pages*. / a *Page* with long and many *Lines*. / a *Line* with many *Letters*. / a *Pot* with *Stubs* and *Antimony*.

Chaſe. See § 9. ¶ 6.

Cheeks. is a part of the *Preſs*; for which See § 10. ¶ 2. and part of the *Dreſſing-block-groove*. For which See § 20. ¶ 3.

Choak. If a *Form* be not Waſht in due time, the *Inck* will get into the Hollows of the *Face* of the *Letter*: And that getting in of the *Inck* is called *Choaking* of the *Letter*, or *Choaking* of the *Form*.

Claw of the *Sheeps-foot*. See § 11. ¶ 20.

Clean Proof. When a *Proof* has but few Faults in it, it is called a clean *Proof*.

Cloſe Matter. *Matter* with few *Breaks* or *Whites*.

Cloſe Work. ibid.

Colation Books. See § 25. ¶ 4.

Come. When the *Face* and *Shank* of a *Letter* is *Caſt* perfect, *Founders* ſay, *It Comes well*; if unperfect they ſay, It does not come, or *It comes not well*.

Come Down. the *Toe* of the *Spindle* is ſaid to *Come down* by *Pulling* the *Bar*: So is the *Bar* when it is *Pull'd* near the hither *Cheek*: Alſo, the *Preſs-man* is ſaid to *Come down the Form* with his *Balls*: For which See § 24. ¶ 13.

Companion. See § 24. ¶ 15.

Comes off. A *Form* that receives a good *Impreſſion*, *Comes off well*, if a bad *Impreſſion*, it *Comes off ill*, or it *Comes not well off*. Alſo a phraſe uſed in *Gathering* of *Books*; for a *Heap* that is *Gathered off* is ſaid to *Come off*. See § 25. ¶ 3.

Com-

Compoſing Rule. See § 24. ¶ 4.
Compoſiter. He that *Compoſes* or *Sets* the *Letters.*
Compoſing-ſtick. See § 9. ¶ 4.
Copy-money. See Cuſtoms.
Cording-quire. See § 25. ¶ 5.
Correct. When the *Corrector* reads the *Proof*, or the *Compoſiter* mends the *Faults* he markt in the *Proof*, they are both ſaid to *Correct;* the *Correcter* the *Proof*, the *Compoſiter* the *Form.*
Correcting-ſtone. See § 6.
Corrections. the *Letters* markt in a *Proof* are call'd *Corrections.* See § 22. ¶ 8.
Counter Punch. See § 13. ¶ 2.
Counting off Copy. See § 22. ¶ 9.
Coyns. See § 8.
Cramp Irons. See § 11. ¶ 15.
Croſs Long, Short. See *Chaſe.*
Cull Paper. See § 25. ¶ 5.
Cut the Friſket. See § 24. ¶ 7.

D

Dance. See § 22. ¶ 7.
Dele. See § 23.
Deſtribute. See § 22. ¶ 3.
Deſtributing-ſtick. See ibid.
Devil. The *Preſs-man* ſometimes has a Week-Boy to *Take Sheets*, as they are Printed off the *Tympan*: Theſe Boys do in a Printing-Houſe, commonly black and Dawb themſelves; whence the Workmen do Jocoſely call them *Devils*; and ſometimes *Spirits*, and ſometimes *Flies.*
Direction, the word that ſtands alone on the Right Hand in the bottom *Line* of a *Page.*

Dire-

Direction-line. The *Line* the *Direction* ſtands in.

Double Letter. æ œ ſt ſh, and ſeveral others *Caſt* on one *Shank* are called *Double Letters*: ſ and f have ſeveral *Aſcending Letters* joyned to them, becauſe their *Beaks* hanging over their *Stems* would (were they not *Caſt* on one *Shank*) ride upon the tops of the *Stems* of the adjoyning aſcending *Letter*.

Double. A Sheet that is twice *Pulled* and lifted never ſo little off the *Form* after it was firſt *Pulled*, does moſt commonly (through the Play of the *Joynts* of the *Tympan*) take a double *Impreſſion*: This Sheet is ſaid to *Double*. Or if the *Preſs-man Run in* ſo, as the Fore-ſide of the *Plattin* Print with the *Firſt Pull* into part of the *Second Pull*, or the hind edge of the *Plattin Print* with his *Second Pull* into part of his *Firſt Pull*; either of theſe twice Printing is called *Doubling*. *Doubling* alſo happens through the looſe *Hanging* of the *Plattin*, and through too much play the Tennants of the *Head* may have in the *Morteſſes* of the *Cheeks*, and indeed through many Wearings and craſieneſſes that often happens in ſeveral parts of the *Preſs*. See § 24. ¶ 18.

Dreſs a *Chaſe*, or *Dreſs* a *Form*, is all one. It is to fit the *Pages* and the *Chaſe* with *Furniture* and *Quoins*. See § 22. ¶ 7.

Dreſs Letter. See § 21. ¶ 1.

Dreſſing Block. See § 20. ¶ 3.

Dreſſing Block-groove. ibid.

Dreſſing Hook. See § 20. ¶ 1.

Dreſſing Knife. See § 20. ¶ 4.

Dreſſing Sticks. See § 19. ¶ 6.

Drive out. When a *Compoſiter Sets Wide*, he is ſaid to

to *Drive out* or *Run out*. In *Founding*, If *Letter* be *Caſt* too Thick in the *Shank* it *Drives out*, or if it be *Caſt* too Thick in any part of the *Shank*, as the *Head*, the *Foot*, the ſides at *Head* or *Foot*, or *Body* at *Head* or *Foot*: They ſay, *It Drives out at Head*, *It Drives out at Foot*, &c.

E

Empty Caſe. See § 22. ¶ 3. & *See Caſe is Low*.

Eaſie Pull. See § 24. ¶ 5.

Eaſie Work. See § 22. ¶ 4. And *Great Letter* and a *Small Form* the *Preſs-man* calls *Eaſie Work*.

Empty Preſs. A *Preſs* that Stands by, which no Workman Works at: Moſt commonly every *Printing-Houſe* has one of them for a *Proof-Preſs*: viz. to make *Proves* on.

Engliſh Body. See § 1. ¶ 2.

Engliſh Face. Plate 26. 27. are *Engliſh Face Letters*.

Even Page. The *Firſt Page* of a *Sheet* or *Form* is called an *Odd Page*, but the *Second*, *Fourth*, *Sixth*, or any other even numbred *Page* is called an *Even Page*. See § 22. ¶ 7.

F

Face of a Letter, See § 13. ¶ 13.

Face of a Page, *or Form*. The Superficies of a *Page* or *Form*, where the *Faces* of every *Letter* lies in the ſame Plain.

Face-Gage. See § 12. ¶ 5.

Face of a Matrice. See § 17. ¶ 1.

Fat Aſhes. *Founders* call their Aſhes *Fat*, if they are conſiderably Heavy, becauſe then they have much *Mettle* in them.

Fat. See *Beat Fat*.

Fat

Fat Face, or *Fat Letter*, is a broad Stemmed *Letter*.

Female Gage, *Screws*, &c. The *Hollow Gage*, or *Hollow Screw* that receives its *Match Gage* or *Screw*, &c.

Firſt. See § 24. ¶ 15.

Firſt Form. The *Form* the *White Paper* is Printed on, which generally by Rule ought to have the *Firſt Page* of the Sheet in it.

Firſt Page. See § 22. ¶ 7.

Firſt Pull. See § 11. ¶ 16. & § 24. ¶ 7. Conſiderations 8. & § 24. ¶ 15.

Flat-Gage. See § 12. ¶ 3.

Flat Table. See § 12. § 8.

Fly. See *Devil*.

Follow. viz. *See if it follows*, is a Term uſed as well by the *Corrector* as by the *Compoſiter* and *Preſs-man*. It is uſed by the *Corrector* and *Compoſiter* when they examine how the beginning *Matter* of a ſucceeding *Page* agrees with the ending *Matter* of the precedent *Page*: And how the *Folio's* of thoſe *Pages* properly and numerically follow and ſucceed one another, Leſt the *Pages* ſhould be *Tranſpoſed*. But the *Preſs-man* only examines that the *Folio* and beginning word of the *Second Page*, and *Signature* of the *Firſt* and *Third Page* (when the *Reteration* is on the *Preſs*) follows the *Folio* and *Direction* of the *Firſt Page*, and the *Signature* of the *Third Page* follows the *Signature* of the *Firſt Page*, orderly according to the Volumne, leſt the *Form* ſhould be laid wrong on the *Preſs*.

Foot of the Letter. The *Break-end* of the *Shanck* of a *Letter*.

Foot-

Foot-line. See § 14. ¶ 12.

Foot of a Page. The bottom or end of a *Page.* See § 22. ¶ 7.

Foot-Step. See § 11. ¶ 21. & § 24. ¶ 7. & Conſiderations 11.

Foot-ſtick. See § 8.

Form. The *Pages* when they are fitted into a *Chaſe.*

Foul Proof. When a *Proof* has many *Faults* markt in it.

Fount. Is the whole number of *Letters* that are *Caſt* of the ſame *Body* and *Face* at one time. See § 2. ¶ 2.

Frisket. See § 10.

Froze out. In Winter when the Paper is Froze, and the *Letter* Froze, ſo as the Workmen cannot Work. They ſay, *They are Froze out.*

Fryer. When the *Balls* do not *Take*, the *Un-taking* part of the *Balls* that touches the *Form* will be left White, or if the *Preſs-men* Skip over any part of the *Form*, and touch it not with the *Balls*, though they do *Take*, yet in both theſe caſes the White places is cal'd a *Fryer.*

Full Form or *Page.* A *Form* or *Page* with few or no *Breaks* or *White-lines.*

Full Preſs. When two Men Work at the *Preſs.* It is called a *Full Preſs.*

Furnace. See § 18.

Furnace open, or *Wind Furnace.* See § 18. ¶ 2.

Funnel. See § 18.

Furniture. See § 8:

G

Gage. Gages mentioned in this Volumne have an adjunct Name, as *Flat Gage, Joynt Gage, Italick Gage, Long Gage, Male Gage, Short Gage, Standing Gage, Steel Gage,* which See reſpectively.

Galley. See § 5.

Galley-Slave. See the Cuſtoms.

Gallows. See § 10.

Garter. See § 11. ¶ 14.

Gather Books. See § 25. ¶ 3.

Geat, is the little Spout or Gutter made in the Brim of *Caſting Ladles.*

Get in. Matter is *Got in* in a *Line, Page, Sheet* or *Book,* if *Letter* be Thinner *Caſt* than the *Printed Copy* the *Compoſiter Sets* by. Or *Matter* is *Got in* if the *Compoſiter Sets Cloſer*: Or if he *Widens* his *Meaſure*; or puts more *Lines* in a *Page.* See a *Line.*

Girts. See § 11. ¶ 21.

Good Colour. Sheets Printed neither too Black or too White.

Good of the Chappel. Forfeitures and other *Chappel* Dues are Collected for the *Good of the Chappel,* viz. to be ſpent as the *Chappel* approves.

Good Work, is called ſo in a twofold ſenſe: The Maſter-Printer calls it *Good Work* when the *Compoſiters* and *Preſs-men* have done their duty; and the Work-men call it *Good Work,* if it be *Light Eaſie Work,* and they have a good price for it.

Go up the Form. See § 24. ¶ 13.

Great Cannon. See § 2. ¶ 2.

Great Numbers. See *Lay on.* Above 2000 Printed on one Sheet are accounted *Great Numbers.*

Great

Great Primmer. See § 2. ¶ 2.
Gutter-ſtick. See § 8.

H

Hag. See § 15. ¶ 1.
Half a Line. When *Letter Drives out* or *Gets in* in the *Body*, in a number of *Lines*, *Founders* ſay, *It Drives out or Gets in* Half a *Line*, a whole *Line*, a quarter of a *Line*, &c. *viz. Half a Body*, a *whole Body*, a quarter, *&c.* of a *Body*.
Half a Preſs. When but one Man Works at the *Preſs*, It is called *Half a Preſs.*
Half Work. He that Works but three days in the Week, does but *Half Work.*
Hammer end of a Punch. See § 13. ¶ 13.
Hangs. See *Letter Hangs.* & § 22. ¶ 4.
Hang the Plattin. See § 24. ¶ 4.
Hang up Paper. See § 25. ¶ 1.
Hard Inck. Inck very well Boyled. See § 11. ¶ 23.
Hard Juſtifying. See § 22. ¶ 4.
Hard Pull. See § 24. ¶ 5.
Hard Work. See § 22. ¶ 4. And ſmall *Letter* and a *Large Form*, *Preſs-men* call *Hard Work.*
Head. See § 10. ¶ 5.
Head Line. See § 14. ¶ 2.
Head of a Page. The top or beginning of a *Page.* See § 22. ¶ 7.
Head-ſtick. See § 8.
Heap. So many Reams or Quires as is *Set out* by the *Warehouſe-keeper* for the *Preſs-man* to *Wet*, is call'd a *Heap*: But then it is call'd a *Dry Heap*, till the *Preſs-man* have *Wet* it, and then it is indeed called a *Heap.* See alſo § 25.

Heap holds out. When it hath its full intended Number of Sheets.

Heavy Work. See *Hard Work.*

Heighth. See *High againſt Paper.*

High againſt Paper. If a *Punch* be not Sunk deep enough into the *Matrice*, the *Letter Caſt* will not ſtand high enough againſt Paper. And if it be Sunk too deep into the *Matrice*, the *Letter Caſt* will be too *High* againſt Paper. See § 17. ¶ 2.

Holds out, or *Holds not out.* Theſe Terms are applicable to the Quires of *White-paper*, to *Wrought-off Heaps*, to *Gathered Books*, and to ſorts of *Letter* &c. If Quires of White Paper have twenty five Sheets a piece in them, they ſay, *The Paper holds out five and twenties.* Of *Wrought off Heaps*, the *Heap* that *Comes off* firſt in *Gathering* is ſaid, *Not to Hold out.* Of *Gathered Books*, if the intended number of perfect *Books* are *Gathered*, they ſay the *Impreſſion Holds out*: But if the intended number of *Perfect Books* cannot be *Gathered* off the *Heaps*, they ſay the *Impreſſion Holds not out.* And ſo for Sorts of *Letter*, either when it is in the *Founding Houſe*, or in the *Printing Houſe.*

Hole. By a *Hole*, in Printers dialect, is meant and underſtood a place where private Printing is uſed, *viz.* the Printing of Unlicenſed *Books*, or Printing of other mens *Copies.* Many Printers for Lucre of Gain have gone into *Holes*, and then their chief care is to get a *Hole* Private, and Workmen Truſty and Cunning to conceal the *Hole*, and themſelves.

Holy-days. See Cuſtoms.

Hollows of a Letter. The *Sinking in* of the *Counter-*

ter-Punch into the *Punch* makes theſe *Hollows*, ſo does Sculping into the *Face* of the *Punch*. See § 9. ¶ 4.

Hooks. See *Hags*.

Horſe. The Form or Bench *Preſs-men* ſet the *Heaps* of Paper on. See alſo Cuſtoms.

Horſe-fleſh. If any Journeyman ſet down in his Bill on *Saturday* Night more Work than he has done, that Surpluſage is called *Horſe-fleſh*: And he abates it in his next Bill.

Hoſe. See § 11. ¶ 14.

Hours. *Preſs-men* reckon their Work by Hours, accounting every *Token* to an Hours Work: And though it be the ſame effectually with *Tokens*, yet they make their prizes of different Work by the Hour; and it paſſes current for a *Token*. If two Men Work at the *Preſs* ten Quires is an Hour; if one Man, five Quires is an Hour.

I

Jaws. See § 15. ¶ 6.

Imperfections of Books. See § 25. ¶ 3.

Imperfections of Letters. When the *Founder* has not *Caſt* a proportionable number of each ſort of *Letter*, the wanting *Letters* are called *Imperfections*, as making the reſt of the *Fount* unperfect. See *Sorts*.

Impoſe. See § 22. ¶ 7.

Impreſſion holds out. See *Holds out*.

In-Page. See *Out-Page*.

Inſertion. If the *Compoſiter* have left out Words or *Lines*, the *Corrector* inſerts it, and makes this mark ʌ where it is *Left out*, which is called the mark for *Inſertion*. See § 23.

Joynt

Joynt flat Gage. See § 14. ¶ 4.
Joynts. See § 10. ¶ 9.
Inner Tympan. See § 11. ¶ 10.
Italick Gage. See § 12. ¶ 6.
Juſtifie a Matrice. See § 17. ¶ 2.
Juſtifie a Mold. See § 16.
Juſtifie a Stick. viz. a *Compoſing-ſtick.* See § 22. ¶ 4.

K

Keep in, is a caution either given to, or reſolved on, by the *Compoſiter*, when there may be doubt of *Driving out* his *Matter* beyond his *Counting off*, wherefore he *Sets cloſe*, to *Keep in.*

Keep out, is a caution either given to or reſolved on, by the *Compoſiter*, when there may be doubt of *Getting in* his *Matter* too faſt for his *Counting off*: Wherefore he *Sets Wide*, to *Drive* or *Keep out.*

Kern. See § 19. ¶ 5.
Kerning-Knife. See § 19. ¶ 5.
Kerning-ſtick. See § 19. ¶ 5.
Knife backt Sculptor, is a Sculptor with a thin edge on its back.
Knife-file. A file with a thin edge.
Knock up Balls. See § 24. ¶ 10.
Knock up Books. See § 25. ¶ 3.
Knock up a Letter. It ſometimes happens with old *Letter*, that a *Letter* may be worn ſo low that it will not Print well in a *Page*: The Workman then takes that *Letter* out of the *Form*, and holds the *Shank* of it upon the ſide of the *Chaſe*, and with the *Head* of the *Shooting-ſtick* beats lightly upon the *Foot* of the *Shank*, till he have battered *Mettle* enough

enough out of the *Shank*, to raiſe it higher againſt Paper: If it prove too high againſt Paper, he Rubs the bottom of the *Shank* upon the ſide of the *Chaſe* to rub it down: This Operation ſeldom happens, unleſs another of the ſame ſort of *Letter* is wanting, and hard to come by: For elſe the *Compoſiter* will bow the *Letter*, and pop it into a Waſte *Box* in his *Caſe*, where he puts all naughty *Letters*, that he may not be troubled with them another time.

Knot. See § 20. ¶ 3.

L

Ladles. See § 18. ¶ 3.

Lay in Sheets. When the *Preſs-man* lays *Sheets* on the *Tympan*, it is ſtiled *Laying in Sheets.*

Lay out Sheets. When the *Preſs-man* takes *Sheets* off the *Tympan*, and lays them on the *Heap*, it is ſtiled *Laying out Sheets.*

Lay on. A phraſe uſed for the Number of Books to be Printed. Thus they ſay, There is 1000, 2000, 3000, *&c. Laid on.* See *Great Numbers.* See *Small Numbers.*

Lean Aſhes. Founders call their Aſhes *Lean*, if they are *Light*; becauſe then they have little *Mettle* in them. See *Fat Aſhes.*

Lean. See *Beat Lean.*

Lean Face. A Letter whoſe Stems and other Stroaks have not their full width.

Lean Stroaks. The fine Stoaks in a Letter.

Leather Groove. See § 17. ¶ 2.

Letter-Board. See § 7.

Letter Hangs. If the *Compoſiter* has been careleſs in Emptying his *Compoſing-ſtick*, ſo as to ſet the *Letter* looſely

looſely down in the *Galley*, and they ſtand not perfectly Square and Upright, the *Letter* Hangs: Or if after *Overrunning* on the *Correcting-ſtone* he has not Set his *Letter* in a Square poſition again, before he *Locks up*, (for we may ſuppoſe when the *Pages* are Open'd the *Letter* ſtands Looſe, and more or leſs out of Square) So then, the *Matter* ſtanding thus out of Square, is ſaid to *Hang*. See § 22. ¶ 4, 7.

Light Work. See *Eaſie Work.*

Liner. See § 12. ¶ 7.

Lining-Stick. See § 16. ¶ 2.

Lock up. See § 22. ¶ 7. and § 21. ¶ 1.

Long Croſs. See *Chaſe.*

Long Gage. See § 12. ¶ 5.

Long Primmer. See § 2. ¶. 2.

Long Pull. See § 24 ¶ 5.

Looſe Juſtifying. See § 22. ¶ 4.

Low againſt Paper. See *Heigth againſt Paper.*

Low Caſe. When the *Compoſiter* has *Compos'd* almoſt all his *Letters* out of his *Caſe*, he ſays his *Caſe* is *Low.*

Lower Caſe. See § 3.

M

m *Thick.* See § 13. ¶ 1.

Make a Meaſure. See § 22. ¶ 4.

Make ready the Form. See § 24. ¶ 7.

Male Gage. The outer *Gage*, or outer *Screw*, that enters or fits into its *Match Gage* or *Screw*, &c.

Mallet. See § 9.

Matrice. See § 17. ¶ 1.

Matter. The ſeries of the diſcourſe of the *Compoſiters Copy.* *Mea-*

Meaſure. The width of a *Page.* See *Compoſing-Stick.*

Mettle. See § 18. ¶ 2.

Mold. See § 15. ¶ 1.

Monk. When the *Preſs-man* has not *Deſtributed* his *Balls*, ſome ſplotches of *Inck* may lye on one or more of them, which in *Beating* he delivers upon the *Form*; ſo that the Sheet Printed on has a black blotch on it: Which Blotch is called a *Monk.*

Mouth-piece. See § 15. ¶ 1.

N

n *Thick.* See § 13. ¶ 1.

Naked Form, or *Page*, is when the *Furniture* is taken from about all ſides of the *Form* or *Page.* See § 22. ¶ 7.

Neck of a Letter. So much of the *Punch* as is Sunk into the *Matrice* is called the *Neck*; and when that *Letter* is *Caſt* of *Mettle*, it is ſo much as comes above the Square of the *Shank*, *viz.* above the *Beard.*

Nick. See § 15. ¶ 1.

Nomparel. See § 2. ¶ 2.

Notch of the Matrice. See § 17. ¶ 2.

Notes. *Quotations* down the ſide of a *Page* are called *Notes.*

Number Laid on. See *Lay on.*

Nut of the Spindle. The *Female Screw* that receives the *Worms* of the *Spindle.*

O

Odd Page. The Firſt, Third, Fifth, Seventh, and all un-even numbred *Pages* are *Odd Pages.*

Off. A *Preſs-man* uſually ſays, *I am off*, meaning he has

has *Wrought off* his *Token*, his *Heap*, his *Form*.

Open Matter. Full of *Breaks* and *Whites*.

Open Furnance. See § 18. ¶ 2.

Open the Form. See § 22. ¶ 2.

Open Work. See *Open Matter*.

Over-run. See § 22. ¶ 8.

Out. A *Compoſiter* uſually ſays, *I am Out*, meaning he has *Set out* his *Page*, *Form*, or *Copy*. See alſo § 23.

Out-Page. In *Octavo's*, *Twelves*, *Sixteens*, every *Out-ſide Page* in the Sheet is called an *Out-Page*, the reſt are called *In-pages*.

Out of Regiſter. Bad *Regiſter*. See § 24. ¶ 7.

P

Pale Colour. If there be not *Blacking* enough in the *Inck*, or the *Form* be *Beaten* with too *Lean Balls*, the Work will be ſaid to have a *Pale Colour*.

Pallat. See § 15. ¶ 1.

Pan. The great *Ladle* that *Founders* melt their *Mettle* in, when they are *Caſting Letters*, is called the *Pan*. See alſo § 9. ¶ 18.

Paper-bench. See *Horſe*.

Paper-board. See § 7.

Paper the Caſe. See § 22. ¶ 1.

Paper Windows. See Cuſtoms.

Paper up Letter. *Pages*. See § 22. ¶ 10.

Pearl. See § 2. ¶ 2.

Peel. See § 11. ¶ 22.

Pelts. Sheep Skins untan'd, uſed for *Ball Leathers*.

Pica. See § 2. ¶ 2.

Picks. When either pieces of the Skin or Film that grows on *Inck* with ſtanding by, or any dirt get into the

the *Hollows* of the *Face* of the *Letter*, that Film or Dirt will fill or choak up the *Face* of the *Letter*, and Print Black; and is called a *Pick*; becauſe the *Preſs-man* with the point of a Needle, picks it out.

Pidgeon-holes. See § 22. ¶ 24.

Plattin.
Plattin-hooks.
Plattin-pan.
Plattin-plate.
} See § 9. ¶ 18.

Play with Quadrats. See Cuſtoms.

Plow. See § 20. ¶ 5.

Points. See § 11. ¶ 19. Alſo , ; : . - ? ! (') [* § †, and other marks, are all by *Printers* and *Founders* called *Points.*

Point-holes. The two Holes the *Points* prick in a Sheet of Paper. See § 22. ¶ 7.

Point-Screws. See § 11. ¶ 9.

Preſs. See § 10.

Preſs-man. See § 24. ¶ 1.

Preſs goes. When the *Preſs-men* are at Work, the *Preſs* is ſaid to *Go.*

Preſs goes Hard, Heavy. See § 24. ¶ 5. and *Preſs goes Eaſie, Light.*

Preſs ſtands ſtill. When the *Preſs-men* are not at Work, the *Preſs* is ſaid to *ſtand ſtill.*

Preſs-ſtone. See § 11. ¶ 17.

Proof. See § 24. ¶ 18.

Proof Letters. See § 16. ¶ 2.

Proof Preſs. See *Empty Preſs.*

Print Hand. See Plate 11, 12, 13, 14, 15, 16, 17.

Pull—— Eaſie, Long, Short, Soft. See § 24. ¶ 5.

Punch.

Punch. See § 13. ¶ 1.

Py. when a *Page* is broken, thoſe broken *Letters* are called *Py.* See *Broken Letter.*

Q

Quadrats. See § 19. ¶ 1.

Quarters. Quarto's, Octavo's and *Twelves Forms* are *Impoſed* in *Quarters.* They are called *Quarters,* not from their equal diviſions; but becauſe they are *Impoſed* and *Lockt up* apart. Thus half the *Short-Croſs* in a *Twelves Form* is called a *Quarter,* though it be indeed but one Sixth part of the *Form.*

Quoins. See § 8.

Quotation Quadrats, Are *Caſt* the heighth of the *Quotation.* They are *Caſt* of different *Bodies,* that the *Compoſiter* may have choice of them to *Juſtifie* his *Notes* or *Quotations* exactly againſt the deſigned *Line* of the *Page.*

R

Racks. See § 11. ¶ 22. & § 12. ¶ 19.

Rag. When *Letter Caſt* has a Bur on any of its edges, that Bur is called a *Rag.*

Regiſter. See § 15. ¶ 1. & § 24. ¶ 7.

Regiſter-ſheet. The Sheet or Sheets Printed to make *Regiſter* with.

Reteration. The *Second Form,* or the *Form* Printed on the backſide of the *White Paper.*

Reviſe. See § 23.

Ribs. See § 10. ¶ 8. & § 11. ¶ 15.

Riglet. Is a ſort of *Furniture* of an equal Thickneſs all its Length. It is *Quadrat* high, of ſeveral Thicknesſes, viz. a *Nomparel, Brevier, Long-primmer, Pica,* &c. Thick.

Rince

Rince the Form. See § 22. ¶ 2.

Rincing-Trough. The Trough *Forms* are *Rinced* in.

Riſe. A *Form* is ſaid to *Riſe*, when in Rearing it off the *Correcting-ſtone* no Letter or *Furniture*, &c. ſtay behind. See § 22. ¶ 7.

Rounce. See § 11. ¶ 16.

Rowl up the Ball Leathers. See § 24. ¶ 18.

Rub Letter. See § 19. ¶ 4.

Rubs not. When the *Shank* is *Caſt* too *Thin*, that in *Rubbing* part of the *Face* or the *Topping* or *Footing* *Rubs* away: *Founders* ſay, *It does not Rub.*

Rubs well. When the *Shank* of a *Letter* has a proper Thickneſs, *Founders ſay, It Rubs well.*

Rub out Inck. See § 24. ¶ 11.

Rules. viz. *Braſs Rules.* See § 2. ¶ 2.

Run in the Carriage. See § 24. ¶ 15.

Runs on Sorts, when *Matter* runs much on ſome few Sorts of *Letters*, they ſay, *it Runs on Sorts*, See *Sorts.*

Run out from Copy. See *Drive out.*

S

Scaboard. See § 8.

Second at the Preſs. See § 24. ¶ 15.

Second Pull. See § 11. ¶ 16. Conſiderations 8. & § 24. ¶ 15.

Sets Foul. See *foul Proof.*

Sets Clean. See *Clean Proof.*

Sets Cloſe. See *Get in.*

Sets Wide. See *Drive out.*

Set out Paper. See § 25. ¶ 5.

Set the Rounce. See § 24. ¶ 3.

Sets off. Work that is newly *Wrought off* at the *Preſs* often

often *Sets off*, eſpecially if it be *Fat Beaten* with *Soft Inck*: For when it comes to be *Beaten*, or ſometimes only hard preſt by the *Book-binder*, the moiſt *Inck* ſpreads and delates it ſelf round about the *Face* of every *Letter*, and ſullies and ſtains the whole *White Paper*.

Shake. See § 19. ¶ 1.

Shank, the ſquare *Mettle* the *Face* of a *Letter* ſtands on, is called the *Shank* of a *Letter*.

Sheeps-foot. See § 11. ¶ 20.

Shooting-ſtick. See § 9. ¶ 2.

Short-croſs. See *Chaſe*.

Short-Page. See § 12. ¶ 5.

Side-ſtick. See § 8.

Signature. See § 22. ¶ 4.

Sinck Matrices. See *Sinck Punches*.

Sinck Punches. See § 17. ¶ 1.

Slice. See § 11. ¶ 11.

Sliding-Gage. See § 12. ¶ 4.

Sliding-Socket. See § 12. ¶ 4.

Small Numbers. Under 1500 *Laid on* is accounted a *Small Number*. See *Great Numbers*; and See *Lay on*.

Smoak Vent. See § 18. ¶ 1.

Smout. Workmen when they are out of conſtant Work, do ſometimes accept of a Day or twos Work, or a Weeks Work at another Printing-houſe: this By-work they call *Smouting*.

Soaking Pull. See § 24. ¶ 5.

Soft Pull. ibid.

Soft Inck. *Inck* or *Varniſh* moderately boiled. See § 11. ¶ 23.

Solace. See Cuſtoms.

Sop

Sop the Balls. When a *Preſs-man* has taken too much *Inck*, he is ſaid to *Sop the Balls.*

Sorts. The *Letters* that lye in every *Box* of the *Caſe* are ſeparately called *Sorts* in *Printers* and *Founders* Language; Thus a is a *Sort*, b is a *Sort*, c is a *Sort*, *&c.*

Space Thick, Space Thin. See § 12. ¶ 1.

Spindle. See § 11. ¶ 12. 16.

Spirit. See *Devil.*

Spring. See § 15. ¶ 1.

Squabble. A *Page* or *Form* is *Squabbled* when the *Letter* of one or more Lines are got into any of the adjacent *Lines*; or that the *Letter* or *Letters* are twiſted about out of their ſquare Poſition.

Stem. The ſtrait *Flat* ſtroaks of a ſtraight *Letter* is called *Stem.* See § 14. ¶ 1.

Stick. The *Compoſing-ſtick* commonly ſo called.

Stickfull. See § 22. ¶ 4.

Stiff Juſtifying. See § 22. ¶ 4.

Stirring-Pote. See § 18. ¶ 2.

Stoak-hole. See § 18. ¶ 1.

Stoaking-Rod. A Rod of thick Wyer put into ſuch an Handle as is the Handle of a *Letter-Ladle.* Founders uſe it to ſtir up the Fire in the *Furnace.*

Stone. See § 19. ¶ 1.

Stool. See § 15. ¶ 1.

Stop. See § 19. ¶ 1.

Strip a Form. See § 22. ¶ 2.

Stroaks, are fat, lean, fine, hair. See § 14. ¶ 2.

Superiour Letters, are often ſet to *Marginal Notes*: They are *Letters* of a *Small Face*, high *Juſtifyed* by

the

the Founder in the *Mold* near the *Top-Line*.

Swaſh-Letters. See Plate 15.

T

Tache. A ſmall Board with *Notches* in its Fore-edge; either nailed upon the Fore-edge of the *Work-Bench*, or ſcrewed into the *Vice*; ſo as the *Notches* may ſtand forwards to reſt the *Shank* of a *Punch* in. See § 12 ¶ 9.

Tail of Letters. See § 14. ¶ 2.

Take off. See Cuſtoms.

Taking off. See § 22. ¶ 3.

Take up. See § 22. ¶ 3.

Take up a Sheet. See Cuſtoms.

Take Inck. See § 24. ¶ 10.

Teze Wooll, or Hair. See § 24. ¶ 18.

Thick Letter. A *Fount of Letter* that *Rubs* not high enough into the *Neck* is called *Thick Letter*; and conſequently will *Drive out Matter*. See § 17. ¶ 2.

Thick Space. See § 13. ¶ 1.

Thin Space, ought by a ſtrict orderly and methodical meaſure to be made of the Thickneſs of the ſeventh part of the *Body*; though *Founders* make them indifferently Thicker or Thinner.

Throat. See § 15. ¶ 1. & 6.

Till. See § 10. ¶ 6.

Toe of the Spindle. See § 11. ¶ 12.

Token. See § 25. ¶ 5.

Token Sheet. See § 24. ¶ 9. 15.

Tongue. See § 20. ¶ 3.

Tooth of the Plow. The pointed edge that Cuts the Groove in the bottom of the Shanks in the Blocks. See § 21. ¶ 5.

Tranſpoſe.

Tranſpoſe. See § 22. ¶ 7. & § 23.

Turn for a Letter. It often happens when *Matter* Runs upon *Sorts*, eſpecially in *Capitals*, or ſome other Sorts ſeldom uſed, that the *Compoſiter* wants that Sort the *Matter Runs on*; wherefore he is loath to *Deſtribute Letter* for that Sort; or perhaps his *Caſe* is otherwiſe Full. Wherefore inſtead of that *Letter* or Sort, he *Turns* a *Letter* of the ſame Thickneſs, with the *Foot* of the *Shank* upwards, and the *Face* downwards; which *Turned Letter* being eaſie to be ſeen, he afterwards when he can accommodate himſelf with the right Sort, takes out, and puts the right *Letter* in its room. It is alſo a word uſed jocoſely in the *Chappel*, when any of the Workmen complain of want of Money, or any thing elſe, he ſhall by another Workman be anſwered, *Turn for it*, viz. Make ſhift for it.

Tympan. See § 10. ¶ 10.

Tympan-Cloath. See § 24. ¶ 18.

Tympan-ſheet. See § 24. ¶ 7.

V

Vantage. When a *White-page* or more happens in a Sheet, the *Compoſiter* calls that *Vantage*: So does the *Preſs-man*, when a *Form* of one *Pull* comes to the *Preſs*.

Varniſh. See § 11. ¶ 23.

Viſorum. See § 22. ¶ 4.

Un-lock the Form. See § 22. ¶ 2.

Underlaid. A Phraſe uſed by *Preſs-men* for the *Light* and *Eaſie*, or *Heavy* and *Hard Running in* of the *Carriage*. Thus they ſay, *The Preſs goes light and eaſie*

eaſie under Hand, or it *goes heavy or hard under Hand.*

Upper Hand, when the *Spindle* goes ſoft and eaſie, the *Preſs-men* ſay, *It goes well under Hand*, or *Above Hand.* But the contrary if it goes *Hard and Heavy.*

W

Waſh the Form. See § 24. ¶ 18.

Way-gooſe. See Cuſtoms.

Weak-Inck. See *Soft-Inck.*

Wedge. See § 20. ¶ 3.

White-line. A Line of *Quadrats.*

White-Page. A *Page* that no *Matter* comes in.

White-Paper. Although the firſt *Form* be Printed off, yet *Preſs-men* erronically call that *Heap White-Paper*, till the *Reteration* be Printed.

Whole-preſs. See *Full-Preſs.*

Wind-furnace. See *Open-furnace.*

Wind-hole. See § 18. ¶ 1.

Wood. See § 15. ¶ 11.

Wyer. See § 15. ¶ 9.

FINIS.

TYPOGRAPHICAL CORRECTIONS

Page	Line	In Original	In Reprint
17	9	*wieght*	*weight.*
17	23	*ſo*	*to.*
19	15	*witout*	*without.*
20	23	*thanthe*	*than the.*
22	15	*batttens*	*battens.*
36	21	*containiug*	*containing.*
42	31	*hyphen* inserted after *Ten.*	
47	25	*clapse*	*claspe.*
51	15	*an*	*and.*
56	3	*betwen*	*between.*
63	7	*Whether*	*Whither.*
64	4	doublet of *it* corrected.	
65	5	doublet of *it* corrected.	
65	18	*to*	*too.*
70	19	*Serews*	*Screws.*
77	15	doublet of *much* corrected.	
87	17	doublet of *the* corrected.	
89	1	*parenthesis* inserted.	
90	3	*in*	*into.*
92	9	*parenthesis* inserted.	
103	12	*Pnnch*	*Punch.*
120	5	doublet of *the* corrected.	
120	10	*a*	*at.*
136	30	*peice*	*piece.*
141	16	*Bottome*	*Bottom.*
145	9	*he*	*the.*
150	24	*puuch*	*punch.*
200	26	*in*	*is.*
211	17	*nor*	*not.*
213	24	*Lettets*	*Letters.*
221	26	*n*	*in.*
222	11	*Rnn*	*Run.*
237	16	*a bout*	*about.*
239	16	*thrust*	*thrusts.*
247	3	*Chapher*	*Chapter.*
247	11	*Over-rnn*	*Over-run.*
248	30	*Fnrniture*	*Furniture.*
253	7	*proeeed*	*proceed.*
267	16	*performanee*	*performance.*
276	2	*hatdens*	*hardens.*
294	24	*Rnns*	*Runs.*
297	6	*wiIl*	*will.*
303	15	*Wot*	*Wet.*
304	26	*Srrong*	*Strong.*
307	11	*is*	*it.*
307	27	*Bnll*	*Ball.*
308	6	*Seeeps*	*Sheeps.*
322	22	*parenthesis* inserted.	
332	22	*thc*	*the.*
378	19	*to*	*too.*
391	8	*o*	*ſ*
392	9	*a*	*ſ*
393	6	*ot*	*or.*

NOTES

TITLE. At the Sign of Atlas. In Moxon's time the houses in London and elsewhere were not numbered. A house of business was specified and identified by a sign painted with some peculiar device that could be recognized by people who could not read.

THE PORTRAITS. Satisfactory authority cannot be given for the accuracy of the portrait of Gutenberg. Moxon copied it from an earlier German book. The portrait of Coster is a copy of the print first shown by Scriverius in 1635. Van der Linde doubts its genuineness. The portrait of Moxon may be accepted as truthful. It first appeared in the fourth edition (1686) of Moxon's "Tutor to Astronomie and to Geographie."

THE DEDICATION. "The Right Reverend Father in God, John, Lord Bishop of Oxford and Dean of Christ Church," was Doctor Fell, one of the three persons to whom this work was dedicated. Doctor Fell had commended himself to men of letters by a recent gift to the University of Oxford of printing materials of great value. In a report written by him in 1679, he mentions "the low estate of the manufacture of printing" in England, and in the University, as the motive that induced him and associate members of the University, in 1672, to take "upon themselves the charges of the press in the said University, and at the expence of above four thousand pounds furnisht from Germany, France and Holland, an Imprimery, with

all the necessaries thereof, and pursued the undertaking so vigourously, as in the short compass of time which hath since intervened to have printed many considerable books in Hebrew, Greek and Latin, as well as in English; both for their matter and elegance of paper and letter, very satisfactory to the learned abroad and at home." Bagford said that the printing material so presented by the Bishop could not be equaled by any of the great printing-houses on the Continent. A specimen sheet of the types of the Oxford University Press dated 1695 fully warrants this assertion. The types, punches, and materials then given by Bishop Fell are insufficiently described by Rowe Mores in his "English Typographical Founders and Founderies," on pages 44 and 45. A brief description of the Oxford Press as it now is, with suitable illustrations, was published by the Oxford University in 1894.

Bishop Fell was equally interested in paper-making. He encouraged George Edwards, "a cutter in wood of the great letters," and an engraver of maps and other things made use of in the printing of books, to set up a paper-mill at Wolvercote. Bishop Fell died in 1686. Tom Brown made him the subject of his famous epigram:

> I do not love thee, Doctor Fell,
> The reason why I cannot tell;
> But this alone I know full well,
> I do not love thee, Doctor Fell.

2, 3. The Origin of the Invention. Moxon's notice of the invention of typography records a general belief of the writers of that time. The Coster legend had been published, but it was not accepted as unimpeachable history. The weight of authority favored the claims made for Gutenberg. The "Tullies Offices" (Cicero, De Officiis) of 1465, printed by "Johanes Hust" (Fust) and "Petri de Geurshem" (Peter Schoeffer of Gernsheim), is one of the later books of these printers. The book generally received as the one first printed is the Bible of Forty-two Lines, which is at least ten years earlier. It is accepted as the production of John Gutenberg, John Fust, and Peter Schoeffer. Its claim to priority has been disputed in favor of the Bible of Thirty-six Lines, accredited to John Gutenberg only.

Discredit is now given to the legend of the introduction of printing in Oxford in 1468 by Frederick Corseles. "The Dictes and Sayinges of the Philosophers," printed by William Caxton at Westminster in 1477, is considered as the first book printed in England. The claims of Coster have been thoroughly sifted by Dr. A. W. Van der Linde, and his earlier writings on this subject have been translated into English by J. H. Hessels and published under the title of "The Haarlem Legend." The claims of Caxton are fairly reviewed by William Blades in his "Life and Typography of William Caxton."

6, 7. The Branches of Typography. The specification of Letter Cutters, Casters, and Dressers, of Compositors and Correctors, Pressmen and Ink-makers, and some other trades, indicates the complexity of the complete art of printing in 1683. The workmen in each one of these trades tried to keep it distinct, and to prevent its practice by any but those who had been qualified by regular apprenticeship. There were few master-printers who had even superficial acquaintance with the methods and usages of the different departments of typography, and their general ignorance tended to the degradation of the art. The ordinary book of the seventeenth century was distinctly inferior to a book of the same class of the sixteenth century that had been made from the beginning under the direction of a master "who could perform or direct others to perform" all the work upon it. It was for the purpose of diffusing a proper knowledge of the different processes among master-printers that this book was written.

Advertisement on page 8. The plot here mentioned was the one revealed by Titus Oates, who gave false details of an alleged conspiracy to kill Charles II, King of England, and to reëstablish the rule of the Roman hierarchy.

This advertisement is a side-light of value on the methods of the book-selling trade. Moxon foresaw that the cost of the complete book would be too much for the ordinary buyer. He tempted subscriptions by offering it in monthly parts: "2*d.* for each Printed Sheet. And 2*d.* for every Print taken off of Copper Cuts." At these rates the complete book on printing, unbound,

then cost 14*s.* 4*d.* The publishing of a book in parts was an old expedient to increase sales. I first note it in an edition of the Bible in Hebrew, published by Robert Stephens of Paris between the years 1539 and 1544.

Copper-plates were preferred for the illustrations because they could be engraved and printed more neatly and at a smaller expense. The arts of engraving on wood and of woodcut press-work were then in their lowest condition, and Moxon foresaw that his illustrations engraved on wood would not be properly printed.

9. Printing-house. Although "printing-house" is still used in England as a proper designation for the workshop of the master-printer, the term "printing-office," which is more common in the United States, has equally good authority. Many of the early printers called their workshops by the Latin name of "Officina." A book before me by Jodocus Badius, dated 1513, has the imprint "In Officina Aſcenſiana."

10. The Cases and Press. The allowance of "four foot and a half by five foot and a half" for every pair of double frames or stands is the same as that established by modern usage. The allowance of seven feet square of space for each press, which necessarily includes the bank, and working-room for the two pressmen, seems small. It indicates a press for the printing of a sheet not larger than fifteen by twenty inches. The caution to put the presses upon a solid foundation, and to brace them with beams against the ceiling and side walls, shows that provision had to be made for the shrinking of the wood and for its imperfect construction.

11. Windows of glass were unusual. Paper (probably oiled) to admit the light was the only defense against cold, which was sometimes so severe that work had to be suspended. Then, as now, printers preferred the upper floors of the building for composition, and these upper floors were usually lighted by small windows near the ceiling. The English printing-house of the seventeenth century was rude, bare, and small. It was a large printing-house that had four hand-presses and a dozen frames.

13. Font. Moxon's etymology is not approved by recent dictionary-makers, who tell us that font is derived from the French *fonte*, a casting, through *fondre*, to melt or to found. Font is now used to describe a complete collection of founded types. The English face here mentioned as opposed to the roman and italic must be understood as old English black-letter.

14. Sizes and Proportions of Type. Ten bodies of type are specified as a full assortment of sizes from pearl to "great-cannon." Within this limit American and English type-founders now make twenty-one sizes, as well as some smaller and many larger sizes beyond the limit. The dimensions of the bodies here specified are irregular fractions of the English linear foot. An accurate or standard foot measure was not easily procured, and the irregular subdivisions of the foot were calculated with difficulty and often with error. Types so made were unavoidably inexact; when made in different foundries they did not accord in size, and there was often serious disagreement in the bodies of the same foundry when the types were cast at different times. For a specification of these variations, see Savage's "Dictionary of Printing," page 802, and any recent English work on practical typography.

Pick is the name given to any bit of dirt that falls in the counter of a type, and fouls the print.

The geometric rules for the proportions of letters as laid down by Moxon and other theorists are impracticable. They make no provision for the meeting of irregularly shaped letters and no allowance for optical illusions. To make letters seem harmonious and symmetrical in combination, some characters must purposely be out of drawing.

The commendation of Christophel Van Dijck (Christopher Van Dijk) is approved by modern bibliographers and printers. Willems, in his "Les Elzeviers," rates him as the leading punch-cutter of his time, and as really superior to the famous French founders Sanlecque and Le Bé. The beauty of his designs, and the merit of the type made by his Dutch successors in type-founding, secured to them the practical control of the English market for more than a century. During Moxon's time, and for many years after, British type-founders bought most of their

punches and matrices in Holland. William Caslon, who began as a type-founder in 1720, was the first English punch-cutter who broke the domination of the Dutch type-founders in England.

It was the first purpose of the writer of these notes to have this book reprinted in the Dutch types that served Moxon for models. Unfortunately, they were not to be had. They were in the Enschedé foundry before 1735, but at that time they had been put aside as old-fashioned and unsalable. M. Fleischman, a German punch-cutter intrusted with the management of this foundry, had destroyed as useless old metal most of the Van Dijk punches and matrices. This wanton destruction should not prejudice the reader against Fleischman, for he was an expert punch-cutter, although the originator of a bad school of typography. It was from him that Bodoni of Italy, Didot of France, and Baskerville of England, drew their erroneous notions of the superior beauty of over-sharp hair-lines. This peculiarity is clearly shown in the new types of the specimen-book of the Enschedé foundry for the year 1786, which contains a portrait of Fleischman, and signed and dated specimens of his work at that time.

15. The Face or Style of Van Dijk Types. "... the commodious Fatness they [the Van Dijk letters] have beyond other Letters, which easing the Eyes in Reading renders them more Legible." The word "fatness" cannot be understood as printers now accept the word, for the Van Dijk letter would now be rated as thin and much below the present standard of width. It was supposed to ease the eyes in reading because the interior counters of the small or round letters like e, o, and m had been enlarged, but this enlargement was most in height.

"... the true placing their Fats and their Leans" means the extension of thick-stroke to the corresponding shortening of hair-lines, as may be seen in a comparison of the old-style m with a modern m. This improvement was modified by Fleischman and his successors. He protracted the hair-line and shortened the thick-stroke, showing his own skill as a cutter, but seriously damaging the legibility of the letter. This unwise fashion is still in force in nearly all types of modern cut. The bold and sturdy types of William Morris, and the Jenson types

of the Dickinson foundry, are practical protests (possibly too emphatic) against the effeminacies of the modern school of weak and delicate letter.

". . . the sweet driving them into one another" I understand as the close fitting of the different letters. This close fitting or narrow set for each type, with a corresponding thinness of face, made a composition unusually compact. The novelty of this new style was most admired by French type-founders, who have never allowed it to go out of fashion. Fournier, in his "Manuel Typographique," shows compressed types of many sizes, which he says are "in the Dutch style." The type used by Moxon in his book is of the same English body as the type in which this reprint is set, but the Moxon face is a trifle taller and much more compressed.

The uniformity or geometrical accuracy of proportion that is here commended in all sizes of Van Dijk types could not have been made by careful drawing. Yet it does not appear that Moxon had instruments of precision that could measure with exactness any fraction smaller than the thirtieth part of an inch.

16. The Counters of Types. The deep cut or counter recommended for punches is correct instruction, but deep counters were uncommon. The punches that I have examined in the Plantin-Moretus Museum have relatively shallow counters. Fertel of St. Omer, writing in 1723, denounces the shallow counters then made by all founders as a cause of the bad presswork of French printers. Even Fournier ("Manuel Typographique," vol. i, p. 12) says that a counter "about one fourth of a line" (.0222 of the English inch) is deep enough for types between nonpareil and long-primer or pica. No modern printer would be satisfied with a counter of this depth.

17. Types made for Books. The few bodies of type then made were for books only, and were provided in small fonts. The types most largely cast now are those intended for newspapers: brevier, minion, nonpareil, and agate, and they are provided in fonts of many thousand pounds. Italic, which then made at least one third, is now but one tenth of the entire weight of the font. In many morning newspapers italic is excluded.

THE BEARD of a type was the long sloping shoulder that connected the face with the body. The square and high shoulder of modern types, which is of recent invention, is indispensable for the proper moulding of types composed for stereotype work.

18. DECAY OF ENGRAVING ON WOOD. "Few or good Cutters in Wood appear." The decadence of engraving on wood is plainly indicated by Moxon's choice of copper-plate for all his illustrations. The imperfect methods then in use for making brass rules are also illustrated on many pages of his book, where they show rules of unequal height and uneven face.

THE "PLANISHING" OF BRASS RULE was the rolling of the metal in sheets before it was cut in strips type-high.

19. THE LAY OF THE TYPE-CASES. The illustration of the type-cases in plate 1 is apparently of a case in one piece, but the text distinctly says that two cases were used, an upper and a lower, as is customary now. The dimensions of the case, "two foot nine inches long, one foot four inches and an half broad," are almost like those of the modern cases. These two cases were unwisely placed on the stand at the same inclination, so that they seem as one case in the illustration. The capital letters are unhandily put in the extreme left-hand corner of the upper-case. Arabic figures are at the foot of these capitals. There are no small capitals, but the boxes of the right side of the upper-case, of easiest reach, are filled with accents and astronomical signs. The copy of the compositor was laid over these boxes that were seldom used. To keep the copy near to the compositor's eye, the hand in search of frequently used capitals had to make a needless length of reach.

The lay of the lower-case, as shown in plate 1 (b, c, d, e, f, g, in the upper row of large boxes; l, m, n, o, p, q, in the second row; r, t, u, in the lowest row), is an indication that the first printer laid the letters of the lower-case as we now lay the capitals of the upper-case, in alphabetical order. When it had been demonstrated that the letters were unequally used, and that the characters in most request should be near the compositor's hand, the letters a, h, and the thick spaces took the places occupied by

sorts not so often needed. The lay of the case and the size of the boxes in Moxon's plan, and indeed in all modern plans, are not in proper position or proportion to give the greatest convenience to the compositor. Many attempts have been made to correct these faults, but none have succeeded. In this plan, as in other plans maintained by compositors of our time, tradition is stronger than reason. To this day the larger boxes of modern cases contain the same sorts and are in the same position as those of Moxon's plan.

25. The Galley described in plate 2 is the modern slice-galley. The long tray-galley of wood and the long proof-galley of brass are not mentioned. It must have been customary for each compositor to make up his matter on a slice-galley as soon as he had completed his page. When composition was so managed the difficulty of keeping two or more men at work on the same book must have been great.

28. A Correcting-stone "four foot and an half long, and two foot broad" . . . as "a convenient size for the generality of Work" is another indication of the small size of the forms.

28. Scabbord is an old spelling of scabbard or scale-board, which was once a thin strip or scale of sawed wood. The difficulty of sawing wood to uniform thickness led to the use of strips of thin iron, which were cheaper and more even as to thickness. The name that had been given to the wood was continued for the iron. Scabbards were also used as aids in justifying forms and in making register. The scabbards mentioned in printers' grammars of the last century were of cardboard or millboard.

Gutter-sticks are so called because of the groove cut in the center, constructed after the fashion of a gutter for the drainage of water. The groove was needed to prevent the bagging of the tympan and the blacking of the white paper in the operation of presswork. The grooving of gutter-sticks is still maintained, although there is now no need for the groove.

Quoins "about three inches square" are not to be found in any modern printing-office.

31. The "Dressing-block" is now known as the planer, but the form of planer now in greatest use is usually two and one half inches high and eight and one half inches long. "Sheers, such as Taylors use," were common tools in all printing-houses fifty years ago, but they have been supplanted by simple machines that cut brass rule with more accuracy.

32. The Earliest Composing-sticks were veritable sticks of wood. The Plantin-Moretus Museum, at Antwerp, has preserved several of these venerable implements. The stick illustrated by Moxon with a bottom plate, which he calls the back, is one inch narrower than the stick now used in English and American printing-houses. In other features no serious difference can be noted. The sliding measure, now known as the knee, was then made in two parts for the composition of type in two distinct measures — one for the text and one for the marginal notes. The iron would now be adjudged too thin, and the soldering on of a head-plate of long-primer thickness would not be tolerated. The suggestion that the sliding measures, or the knees, could be filed when they proved untrue leads us to the inference that these frail composing-sticks soon became inexact.

34. A Chase "two and twenty inches long and eighteen inches broad" is the proper size for a form of crown paper fifteen by nineteen inches. This, we must suppose, was the size of paper in greatest use. The construction of the Moxon chase is substantially like that of the modern chase, but the iron used was thinner, and the method of hand-filing recommended for the making of squares and dovetails could not have been entirely satisfactory. The old chase must have been weak and easily bent or twisted out of square.

37. The Press in greatest use in England during the first half of the seventeenth century is the one shown in plate 3 and properly stigmatized by Moxon as a "make-shift slovenly contrivance." The press that he approves and illustrates in plate 4 is the "excellently improved invention" of Willem Jansen Blaew, but it received no noteworthy improvement during the eighteenth century. In all its more important features it

was the press on which Benjamin Franklin worked in Philadelphia and in London. It is now entirely out of use, and the technical names of its different parts are imperfectly understood and are often misapplied. Before study is made of the function of each part, the novice should understand the combined action of the different parts.

The form of type to be printed was placed on the bed, or, as it was then called, the stone (marked *l* in plate 4). The surface of the type was inked by dabbing it over with the inking-balls, which are shown on the left side of the wooden cheek of the press. The ink was evenly spread over the surface of the balls by rocking their opposing faces against each other in many directions. When the type was fairly covered with a film of ink, the damp sheet to be printed was laid upon the tympan (marked 5 in plate 4, where it is shown in very bad perspective), which Moxon calls the tinpan. The pressman then folded down the frisket (marked 6 in the plate and incorrectly drawn), so that it would lie flat upon the tympan. This frisket had been previously covered with a sheet of stout paper in which openings had been cut to allow the face of the types to meet the sheet to be printed. This mask of paper protected every other part of the sheet against a possible blackening of ink. The pressman then folded down the tympan so that it rested flat upon the form of type. This done, with his left hand on the rounce handle projecting from the wooden bridge (marked *y* in plate), he drew the form of type half way under the platen (marked *c* in plate), which, it should be noticed, is one half the size of the stone and of the form of type upon it (not shown in plate 4). With his right hand on the bar (marked *q* in plate) he pulled this bar toward him. This pull moved downward the screw and its attached spindle (marked *i l m* in the plate). The pressure so made, resisted above by the head *e*, and below by the winter *d*, was received by the platen and transferred to the paper and the types that were directly under the platen. This pressure printed one half of the sheet. Then the pressman put back the bar, and with the rounce handle moved forward the stone with the type upon it until the unprinted half of the sheet was covered by the platen. This done, he again pulled down the bar and completed the printing of the unprinted half of the sheet. Reversing the motion of the rounce handle, he

drew backward the stone and type, unfolded the frisket and tympan, and removed the sheet that was printed on one side. This seems, and it really was, slow work; but all books printed before the year 1800 were made by this slow method. In all presses made in England before 1800, two pulls of the bar were needed to print a full sheet on one side. The press was not sufficiently strong to print properly a full sheet of demy by one impression. The power produced barely sufficed for the printing of the half-sheet. The minuteness of the directions here given concerning the construction and the fitting up of the different parts shows that rigidity of fitting was regarded as of importance. Yet it was foreseen that the press would leak pressure.

38. Willem Jansen Blaew, a map-maker and printer of eminence, was born in Amsterdam in 1571, and died there in 1638. His improvements to the press were made in 1620. As the Blaew press is now obsolete, I do not think it necessary to follow Moxon in a more minute explanation of the minor parts of his press.

Press-building was not a distinct trade in 1683. Every printer had his presses made to order from his own plans by a local joiner or carpenter, aided by a blacksmith or machinist. The bed-plate was of stone, and the platen of wood. Iron was sparingly used, and only for spindles, hooks, nuts, screws, bolts, etc., that could not be made of wood. Iron was of high price, and was cast or forged with so much difficulty that no one dared think of it as a proper material for the framework or for any of the larger pieces of the press. The pasting down of the vellum on the inner side of the tympan (now known as the drawer) was done to prevent the bagging or bellying outward of the outer tympan. The brayer of flat face was practically a wooden pestle. Its office was to distribute the ink on the block before it was taken up by the balls. This work is now done much better by a cylinder of wood, which still keeps the name of brayer.

59, 60. Moxon estimated that one quarter turn of a home pull of the bar lowered the spindle five eighths of an inch. In the pressure so given, only one fiftieth of an inch ("the Form

to the Stone half a Scabbord") was taken by the type, and about one twelfth of an inch by the paper, tympan, and blankets. This shows waste of power, even when impression was aided by an elastic spongy blanket. The greater part of the force exerted leaked away and was lost in the yielding wood and the compressible joints. A mechanician will see at a glance that a press so constructed could not exert more power than the printing of two octavo pages of type at one impression, and that it would fail entirely to face the black background of a large woodcut.

68. It does not appear that the stone was tested by a straight-edge or by a spirit-level. Many of the stone beds in use during the seventeenth century were uneven as to face and badly leveled, and compelled the pressman to make use of an elastic impression. The frequent breaking of the stones complained of by Moxon was due as much to bad leveling as to the carelessness of the pressman. His preference for the wood lignum-vitæ was reasonable.

69. A Platen of Beech-wood was liable to warp and split, but a more suitable material was rarely used. The only attempt at improvement known to the writer was made by Christopher Plantin of Antwerp, who had his platens covered with sheet copper to cover the cracks in the wood, and to hide the faults they made in impression.

70. The Points and Point-screws are old devices that were used in the fifteenth century. One can find the marks of point-holes in leaves of books printed by Ratdolt and other careful printers of that period.

72. One of the most useful improvements made by Blaew in his new press was the provision of leather girths, one end attached to the carriage, and the other to the barrel around the spindle. With a rounce handle on the end of this spindle, the pressman could easily run in and out the carriage with the type upon it. The first presses did not have this improvement. It is not to be seen in the woodcuts of the presses of Aldus, Badius, and other early printers. (Compare the cuts, plates 3

and 4.) It seems that the carriage of the older form of hand-press must have been shoved in and pulled out by lugging at the framework of the carriage.

73. The Lye-trough, shown in plate 9, was in use fifty years ago as a wash-trough. The form of type, laid flat in the bottom of the trough, was drenched with water by rocking the trough to and fro.

74. The Paper-bench is now made with an inclined bank at the end nearest the pressman. This inclination aids him in seizing the sheet to be printed. On the flat end of the bench he lays the paper after it has been printed.

The Rack to hang paper on, and the Peel, illustrated in plate 32, are now unknown in many American printing-houses, which is much to be regretted. The development of printing that has put the wetting and dry-pressing of paper out of fashion, and has brought into general use the method of printing on dry paper against an inelastic impression, is not an unmixed benefit. The new method has quickened and cheapened common press-work, and has been of great advantage in the printing of fine woodcuts, but it has not bettered the presswork of books. The strong and readable print that was common at the beginning of this century is now produced with greater difficulty and at more expense upon dry paper.

75. Concerning Ink. The very minute description here given of the preparations for making the varnish of ink, which was badly done then in England and better done in Holland, should be enough to correct the common belief that the printing-ink of our predecessors was of better quality than the ink of our time. It is not necessary for the reader to be an expert to note that the materials were crude and the processes unscientific. No test of the quality of the linseed-oil is suggested, which must have been as uneven then as it is now. Nor is anything here said concerning the black, which was probably the crude smoke-black of commerce, with its usual taint of sulphur and other impurities. The cheap printing-ink of our time, even when made by a manufacturer of low repute, is more scientifically

compounded, and is blacker and better, than the ink used by the ordinary book-printer of the seventeenth century. In Moxon's book the ink is variable — on many pages pale, on others over-black; and there are variations of color not entirely due to uneven inking by the pressman. A weak ink applied to a bold type, and printed on wet paper against a spongy impression, seems blacker in print than a better ink printed on dry paper against an inelastic impression.

Resin was the only ingredient added to the black and varnish. No mention is made of other substances that are now rated as of great value.

85. LETTER-CUTTING was always enveloped in mystery. Every new practitioner had to devise many of his own tools and work out his own methods, and independent action led some cutters into serious error. Others, unhampered by traditionary rules, introduced new methods. Moxon has frankly told us all about his tools. Some of them may have been invented by himself, but more of them were those of contemporary English and Dutch punch-cutters and of the makers of mathematical instruments. His descriptions of well-known tools like files, rules, or liners need no comment, but our surprise is aroused at their simplicity, and more than all, at his ignorance of tools of precision. Here and there he does mention the magnifying-glass, but nowhere does he speak of a micrometer. He had no unit as a base for measurement. He frequently describes a measure as a half inch, or as a quarter inch, rarely as an eighth inch. A sixteenth or thirty-second of an inch is never mentioned in these words. It is a proper inference that his measuring-rule was not so minutely subdivided. These nicer subdivisions had to be determined and marked by himself on measuring-rules of his own construction, and he must have done this work very well. To divide the body of english in forty-two equal parts is to make each part equal to about $\frac{46}{10000}$ of an inch. One forty-second part of long-primer body would make each part about $\frac{33}{10000}$ of an inch. His method of determining the width of these parts was to make, by rubbing on a stone, seven thin spaces equal to the em quadrat, or square of the body. The full point or period was one and one sixth of this thin space; the colon, one and two sixths; the

comma, one and three sixths; the hyphen, one and four sixths; the semicolon, one and five sixths. These were practically his testing measures, which were transferred to the plate he called his face-gauge. The modern punch-cutter will be amazed at the crudity of Moxon's tools and methods; but crude as they were, they served him for making types that did good service. Nor does Fournier, in his "Manuel Typographique" of 1766, mention any tool of precision. A testing of distrusted types must have been done largely by sight and touch.

118. The Swash-letters here mentioned are capitals that show the writing-master's flourished extension of line. In many letters these lines hang over the body, as in the old form of roman capital Q. They are most common in old italic, and are fairly illustrated in plate 15.

119. Emerick, emery.

120. Mr. Walberger of Oxford is the Peter Walperger or Walberger of Holland who was installed by Bishop Fell as a punch-cutter for the University Press, and who there earned the reputation of a good workman. He died in 1714.

124. Stem is the thick-stroke of a letter, sometimes called by type-founders the body-mark.

125. English Letter, as mentioned on this page, means Old English, or black-letter.

Moxon's notions of proportion for the variable thickness of the stems or fat strokes of letters were tabulated by allowing forty-two equal parts as the height of the body. The thickness or the width of the stem in a roman capital should be five of these parts; in an italic capital, four; in lower-case roman, three and a half; in lower-case italic, three. These distinctions are nicer than those laid down by Albert Dürer in his diagrams on the proper proportions of letters, where it is stated that the width of the stem should be one tenth the height of the body, which is in the proportion of four and one fifth to forty-two.

These proportions are no longer maintained. The stem is

now made of variable thickness to suit different styles of letter; sometimes it is in the proportion of two to forty-two, and sometimes ten to forty-two. The rule that the stem of the roman capital should be wider than that of the lower-case, and that the stem of the italic capital should be still thinner, has been generally observed in all type-foundries.

No defined width is made for the thin-stroke, which is now called the hair-line; but a glance at the diagrams in plates 11 to 15 is enough to show that this hair-line had a positive and appreciable width for its height. It was well understood also by all punch-cutters that this thin-stroke would appear in print much wider than it did in the punch. The elastic blanket that forced the wet paper not only upon the type, but lapped it around its edges, made the thin-stroke appear in print at least one half wider than it was in the punch or in the type.

129–147, and plates 18 and 19. The type-founder's mould is peculiar to his art. It consists of two large pieces of steel, forming when combined an upper and an under side, so fitted to each other that types of different widths, from the thinnest space to the broadest quadrat, can be cast in its central hollow space without any change in the depth of the body. Each piece has firmly fixed attachments of many smaller bits of steel to insure this exact adjustment. Types may have been cast at a very early date in fixed moulds of sand, but types so made must have been expensive, of irregular body, and exceedingly variable in line, and could not have been combined with the accuracy that is indispensable to the easy practice of type-setting. The usefulness of typography really depends upon the squareness and geometrical accuracy of each type. A variation of one thousandth part of an inch in body is fatal. Early writers on typography did not clearly describe the mould, but they have put on record their admiration of the mechanism devised for the "wonderful art of letter-making," and the "admirable proportion and harmony between the letters." The mechanism that produced this accuracy was without doubt the mould.

The early type-mould was probably made adjustable in two directions, so that it could cast two or more bodies of type. The Bruce foundry of New York has a mould of this descrip-

tion of unknown age. Its peculiar construction explains slight variations of body in types of the same face, made by the same printer during the infancy of the art. This adjustable mould went out of fashion in the sixteenth century, but it was retained in many foundries as a mould of value for emergencies. The mould of fixed body, adjustable as to width only, has always been preferred.

Fournier says that the early moulds of Germany and Holland were of brass. Moxon's mould was of iron. They are now made of steel, with a precision of fitting unimagined by any early founder. The most valuable improvement made in this mould was devised by Archibald Binny of Philadelphia, who, in 1811, affixed a spring to the matrix that gave to it a quick return movement after the type had been cast out of the mould. Many attempts have been made to alter the mould so that it could cast two or more types at the same time. Didot's polymatype mould, made to cast fifty types at one operation, is the most notable; but it can be used only on very small type, and it is not approved by English or American foundries. The mould attached to type-casting machines in most use is, in its more important features, the mould used by Moxon. The new Barth type-casting machine has a mould of different construction, but without great change in principle.

135. GEAT is the old spelling of the word jet, or the waste metal that, in cooling, clings to the type at the orifice in which the hot metal is poured. The separation of this ragged bit of metal from the cast type is known as "breaking off the jet."

142. Properly made, the two halves of the mould should fit so close as to be air-tight; but a too close fitting will not allow the escape of the air from the mould when the fluid metal is injected. An imperceptible slackness in fitting is necessary to allow the escape of the air at the joints. With this escaping air goes out also, at these joints, a thin feather-edge of cooling metal, then known as the rag.

THE JUSTIFYING OF THE MOULD was done without gauges. The types cast were tested by setting them up in parallel rows, one row head up, and one row feet up. If one row overlapped

the other, the fault could be felt by a nice touch. The test of squareness was made by holding two types, nick to nick, between the eye and light. If a glimmer of light appeared, the mould was in fault. To the modern founder these seem tests of great crudity, but they were adjudged good enough.

145. The Dawk was a slight concavity or depression in the body of the cast type, made by a corresponding convexity in the mould. For the correction of faults Moxon allows the use of the file upon the mould with a freedom that must provoke the surprise of every modern mould-maker. For a modern type-caster to file a mould after it has been adjusted is now regarded as a blunder worse than a crime; yet Moxon says that accuracy need not be expected on the first, or even the seventh, time of testing. The workman must mend "on, on, on, by a little at a time, till at last it is so finisht." The underlaying of different parts of the mould with an "assidue," or thin plate of brass, as is here recommended, is evidence that the mould was often filed recklessly and to its injury. In no reputable modern foundry or machine-shop would this tampering with a mould be allowed. The straight-edge, the square, the eye, the fingers—these seem to have been the only available tools of precision.

149. Matrices. Soft copper is recommended because it is not liable to break the punches; but soft copper is not durable. Continued spurts of hot metal against a soft copper matrix soon blunt its edges and finer lines. Modern founders find it a wiser economy to use hard rolled copper, and risk the breaking of punches. Very large types are sometimes struck in copper softened by heat, but this is not regarded as good workmanship. A matrix made by the electrotype process, or by the use of a perforated copper plate riveted upon another solid copper plate, is preferred.

Counters. A thick space, or one third of the square of the body, is made the proper depth for the sinking of a matrix, but this depth was not always secured. The fear of breaking the punch made early founders cautious, and their matrices were sunk to a depth of one fourth or one fifth the square of

the body. When the counter-punch had been made correspondingly shallow, the counter of the cast type and the beard outside the letter were often blackened by the inking-balls, and dots or spots of ink were transferred with the print to the wet paper. Fertel, a French printer of 1723, says ("La Science pratique de l'Imprimerie," page 4) that the counters of some new types were of no greater depth than the thickness of a sheet of strong paper.

153. The Justifying of the Matrices is one of the nice operations of type-founding. Each matrix must have a free movement to and from the mould, but it must fit snugly to the nicest fraction. All the matrices for the same font must occupy a prescribed position upon the mould, exact as to top, foot, and sides. A slight deviation puts the types cast therefrom perceptibly out of line, or makes them crooked, with more space on one side of the character than on the other. Nor is this all. The face of the letter in the matrix must be in exact parallel with the face of the outer plate and the face of the mould. If higher at one side than at the other, the type cast therefrom will have a corresponding unevenness of height. If the distance between the outer surfaces and the faces of the letter is not the same in all the matrices, the types will be of uneven height.

It is a marvel that early type-founders did so well with their imperfect methods. The commonest fault was making the matrix too low, so that the types cast therefrom would be low to paper. As the remedying of this defect calls for an entire section on the botching of matrices, it may be inferred that a certain amount of botching was considered unavoidable. The press of the early printers seems to have been constructed to hide irregularities of height in type that were then thought unavoidable.

164. Making Metal. The melting-point of lead is about 617° and that of iron is about 2100°. At the greater heat lead is destroyed as a metal. It is possible to incorporate lead with iron, but it cannot be done by the process here described. The only useful office performed by the stub-nails was to deprive the antimony of its excess of sulphur, which was incorporated,

undetected, with the dross and the slag. The proportions are not clearly stated: "For every three pounds of iron, about five and twenty pounds of lead." The exact quantity of antimony is not stated. In the second paragraph it is said that the iron and antimony are equal as to weight. Were the ingredients twenty-five pounds of lead, three of iron, and three of antimony; or twenty-five pounds of lead, and three pounds of mixed iron and antimony? No mention is here made of tin or copper. The lead gave to the alloy softness and easy-working qualities; the antimony hardness and stiffness; the iron was intended to give hardness.

169. The Casting of Letters by the hand-mould was slow work. Four thousand types a day was the average performance. It was also hard work. To "face the type" — to make the liquid metal forcibly splash against the face of the matrix — the caster, as Bernard truly says, must make the contortions of a maniac. If it were not forcibly splashed, the type would have a defective face. The jerk or twist given to the arm was one of skill as well as of strength. It often happened that strong men were never able to acquire this knack. They might work hard all day, apparently going through all the motions, and yet be unable to make perfect types. The smaller the body of the type, the harder must be the jerk of the arm.

175. Tin. When types did not come with a good face, the caster put tin in the metal-pot, to make the metal fluid. This is the only mention of the use of tin as an ingredient, and it seems to have been used only to lighten the work of the caster.

The Rag, or feather-edge of thin metal made by the windage or escape of air at the joints, was rubbed off on a grindstone. This method of rubbing could not be employed for types like f or j or f, which overhang the body: the rag on these letters was more slowly taken off with a scraping-knife.

192. The Plowing of a Groove at the bottom of the type was the next process. No mention is made of an inspection of the type for the detection of faults of casting, as is customary in modern type-foundries.

197, 198. Copy. This introduction is obviously the outgrowth of some painful experiences with authors. "By the Laws of Printing, a Compositer is strictly to follow his Copy." This law presupposes that the copy is always correct — a supposition as untenable now as it was then. Moxon admits that the compositor should amend bad spelling and pointing, and use capitals and italics with sense and reason, even if he has to deviate from copy. The standard of typographic style is much higher now. The compositor of to-day who undertook to reset this book in modern style would be required to cut out all the italics and more than half the capitals, readjust the punctuation, correct the spacing, make uniform the spelling, and remodel the headings and the make-up.

199. Cases. These directions for the papering of the cases indicate that many were of unseasoned wood or insecurely jointed. It is not probable that the different parts were dovetailed or fastened with screws.

201. Washing of Forms. The proper method of washing a form, as described on this and following pages, warrants the supposition that very thin ink must have been used, and that this ink must have flowed or spread downward on the spaces and quadrats and between the letters in loosely justified lines.

207. Distribution. In these prolix directions concerning distribution, it seems that a composing-rule was not used to uphold the type. The compositor made use of a reglet for the purpose.

212. The Galley here described was a quarto slice-galley, placed upon the ledge of the upper-case at the right hand, covering the boxes for signs and double letters, which were the characters supposed to be in least use. If the galley had been put in a sliding drawer, upon an inclined shelf under the stand, it would have been as accessible and not so liable to damage.

212. The Visorum, or projecting copy-holder, is now out of use. This is to be regretted, for it brought the copy nearer to

the compositor's eye, enabled him to keep closer attention on each line of the copy, and afforded readier access to all the boxes of the upper-case.

214. Reglets. The rude way in which composition was then done is shown in the second paragraph, in which it is said that compositors many times used reglets instead of brass composing-rules.

218. Signatures. The compositor was required to make up his page as soon as it was composed, and to add the direction, or catch-line, and the signature. The directions for signatures are minute. It was not enough to put the signature letter A at the foot of the first page of the first form. It must be repeated A2 on the third page, as an additional safeguard against the possible carelessness of the folder. If the section to be bound consisted of three or more double leaves, the fifth or seventh page of the section must be appropriately marked with A3 or A4. When these letters followed in numerical order, the folder knew that the folding was correct.

As only twenty-three letters in the alphabet were accepted for signatures (J, U, and W were rejected), the letters could serve only for twenty-three signatures, usually of eight, and never more than sixteen pages. If the book exceeded three hundred and sixty-eight pages, and sometimes a lower number, the alphabet was doubled as Aa. If the book had two or more volumes, the number of the volume had to be added to the signatures. This old method of the trade is still observed in Great Britain. In the United States Arabic figures are preferred for signatures.

The signature was put unhandily in the center of the line, making it difficult to be seen by gatherer or collator. Modern usage now requires that the signature be more conveniently placed for inspection, near the beginning of the white line. A recent fashion is to put the signature near the edge of the tail, so that it can be cut off by the binder. Another fad is to suppress all signatures. This is recommended because signatures are not now found in early manuscripts, but Blades has shown in his essay on this subject that they were always used by all

writers of manuscript books, and that they do not show because they were put at the foot of the page and were afterward trimmed off in binding.

220. Emphasis. The remarks in the fifth paragraph place Moxon before us as a man who had his heart in his trade. The duty of a compositor, "to make the meaning of his Author intelligent to the Reader," and "his Work shew graceful to the Eye, and pleasant in Reading," is pointedly stated. His methods were well adapted for the time and for prevailing typographic fashions. He confesses that the "mode of ordering Titles varies; as may be seen by comparing the Title Pages of every twenty years: Therefore a Lasting Rule cannot be given for the ordering them: only what has been said in general concerning Emphasis." To suit the taste of that time, print must have emphasis, and plenty of it. Every page was peppered with italic; important nouns and verbs and some that are not important must begin with a capital. For the title-page and the running title roman capitals were not bold or black enough. Recourse was had to black-letter. That there was some system, or attempt at system, in this conglomerate of styles is probable, but Moxon has not explained his rules. We know only that the style of this book is not uniform. A proof-reader of our time who attempted to make it uniform would score every page.

The fashion of displaying print with italic and capital letters died hard. More than a hundred years passed before readers discovered that too much emphasis in the text defeated its purpose, and made the text really harder to be read. Not even yet are all publishers and printers able to see that there should be a difference in the treatment of a poster to be read across the street and of a title-page to be held in the hand; and that there is but little more reason for classifying some words of a title in bold display-lines, and others in petty catch-lines of obscure small capitals, than there would be in treating the words of a sentence in the text in a similar manner.

The uncouthness of many of the titles of the seventeenth century is wrongly supposed by some critics to show the vanity of the printer, who wished to display, as well as he could, the extent of his collection. This supposition has no good foundation. The

printer of that time did not have types enough for the needs of title-pages. Between pica and canon were only six distinct bodies and faces of roman letter, and they were rarely of uniform face. There should have been at least a dozen. These types were inelastic, and could not be neatly compressed or expanded to fit the words of every line. The prominent word or words selected by the author for a leading line might be too few or too many to fill that line. All the printer could do was to space out the letters of a short line, or divide words in the over-long line and put them in two lines. The words had to be accommodated to the type. It was for this reason that large roman lower-case, black-letter, and italic were so freely used. Moxon showed good sense in his preference for capital letters, for "Capitals express Dignity where-ever they are Set, and Space and Distance also implies stateliness." Capitals were then made to one square standard form, and were really unfit for more than half the title-pages for which they had to be used. The variety of large roman capitals provided by modern type-founders is better now than it was two centuries ago, yet it is still imperfect. We have a greater variety of roman faces and more sizes, but not one of them is properly graduated in the larger bodies, as they should be, by a difference of three points only.

The mechanical directions concerning petty details of composition seem needlessly minute, but most of them are good, and are obeyed to this day.

232. Of Imposing. As the sheet to be printed in 1683 was always of small size, imposing was a comparatively simple process. But four foldings were made,—folio, quarto, octavo, and twelves,—all of them clearly illustrated by the plates. Some of the simple rules that our author lays down have been unwisely omitted in some modern printers' grammars, viz: An even and an odd page always stand together; the folios of the two pages that stand together make, in their addition, one more than the number of pages in that form.

238. Planing Down. The instruction about this duty is needed more now than it was then. Our author recommends that projecting type be planed down with knocks on the planer

from the closed fist, or with the head of the shooting-stick. Our larger forms require more force, but too much force is often given. The pounding of a form after it has been locked-up with furious blows from a heavy mallet is not warranted.

239. Locking-up. His process of locking-up is not so good. He advises the tightening of each page by the side-stick before that page is tightened at the foot. This indicates the commonness of slack spacing and line justification, for which he suggests the remedy of chewed paper forced into the slack line at the point of a bodkin! He confesses, however, that this is a botchy expedient. The frequent hanging or inward bowing of a page at its foot is usually produced by over-tight locking-up of the page at the side before locking-up the foot.

242. Correcting. As proofs could not be taken on galleys, all correction had to be done on the stone, and this was done as it is now, with the destructive bodkin. Unusual tolerance seems to have been given to the practice of overrunning matter in the form—a practice sure to make bad justification.

260. Of the Corrector and his Office. Moxon requires the corrector to be well skilled in "Latin, Greek, Hebrew, Syriack, Caldæ, French, Spanish, Italian, High Dutch, Saxon, Low Dutch, Welch, &c." Nor is this all. "He ought to be very knowing in Derivations and Etymologies of Words, very sagacious in Pointing, skilful in the Compositers whole Task and Obligation, and endowed with a quick Eye to espy the smallest Fault." One may rightfully doubt that any reader permanently employed by any master-printer of the old time had one half of these accomplishments. Moxon's ideal of a corrector seems to have been based on the tradition that learned men had been employed by Christopher Plantin of Antwerp, and the Stephens of Paris. His error was that he mistook their principal duty, which was not so much to correct errors in proof as to prepare copy after its diligent collation with earlier editions or little-known manuscripts of merit. Scholarly work was cheap. Plantin paid his principal correctors lower wages than his compositors. That these correctors did a deal of schol-

arly work is not to be questioned, yet they overlooked many typographical errors. The scholarly preparer of copy and the editorial and critical proof-reader of the sixteenth and seventeenth centuries are now extinct. No living master-printer can afford to pay for the services of even a presuming successor to any one of these worthies. He has to be content with the proof-reader who is "very knowing in Derivations and Etymologies, and sagacious in Pointing."

The signs or marks then used for the correction of proof are fewer in number, but are substantially the same as those in use now.

266. Alterations. The admonition to the author to deliver his copy perfect, and not to hope that he can mend it in proof without additional expense, is an intimation that badly prepared copy is quite as old as printing.

270. The Fitting of the old Hand-press. This section gives us a curious insight into the defects of the early hand-press. The smearing of tenons with soap or grease; the bracing up of the cheeks, head, and cap, with beams; "the crazy make of the Winter," or the resist to downward impression; "the Under-laying of the Feet"— all these make one doubt whether this press was really "invented upon mature consideration of Mechanick Powers, deducted from Geometrick Principles."

275. The Bedding of the Stone as here described was in bran, but plaster of Paris was sometimes used.

The pouring of water from a sponge on the face of the stone, to see whether it had à "propensitude" for one side more than the other, was the substitute for a spirit-level.

278. Of Hanging the Platen. The platen was suspended by whip-cords from hooks. The spindle was steadied in its action by the guide-rods attached to the hose. The adjustment of the whip-cords to the hose, so that they would not be unevenly strained when the spindle descended, was a nice operation that was not always done with accuracy. When unevenly hung the platen gave untrue impression.

281. Justifying the Head, as here described, was the repacking of the mortises with felt, pasteboard, and scabbard, so that the resist to the impression should be uniform. The mechanic who carefully reads these descriptions of the construction and operation of the press must wonder at the ingenuity of these cross-purposes. The press was made to give impression upon the paper overlying the types, and it must have been intended that the pressure exerted should be confined almost exclusively to the form of types. It should have been rigid and inflexible in every part where pressure might be lost. But we here see that provision was made in the beginning for the escape of the force exerted. Not one tenth of it was felt upon the type. Nine tenths of that force leaked out in the fittings, and really contributed to the needless wearing of elastic or shackly-fitted parts of the press. In important joints one finds elasticity where there should have been rigidity, as well as compressibility in the bed of bran under the stone, in the loosely tenoned head and winter, and in the swinging platen.

287. Additional elasticity was given by the use of a blanket in two folds, or a doubled blanket.

288. Making Register. The rude manner in which forms were sent to press is here shown by the directions to the pressman to correct them when out of register from half a nonpareil to a long-primer! He is ordered first to unlock the form and try to get the pages in register by changing the quoins, or by varying the pressure on them, which frequently produced a twisting of the cross-bars. If this expedient did not serve, then the pressman must put in or take out furniture until the pages were in parallel. This was bad practice. The proper usage now is for the pressman to return a crooked form to the compositor, and require him to make the change. Alterations of margins in crooked type-forms should be made on the imposing-stone, and not on the bed of the press.

291. The Underlaying of wood letters or engravings of any kind that are too low to receive impression is here made another duty of the compositor; but the underlaying or overlay-

ing of types in masses or in patches to correct inequalities of impression is nowhere advised. The spongy blankets were the first and last resort for the correction of this fault.

319. Working at Press. Two pressmen were needed for its efficient service: one to ink the type, one to put on the sheet, print it, and take it from the tympan. It was intended that they should be of equal ability, so that they could do either kind of work. The proper product of the press so manned was put at the high standard of a token an hour, or two hundred and forty sheets printed on one side. The work-day was never less than twelve hours, sometimes more. The press was of small size, yet it required much activity to pull a token in one hour, for two pulls of the bar had to be made on each side of the sheet. In the middle of every ream the paper-maker put a cross slip of white paper as a mark or token that at this point one half-ream ended and the other half-ream began. Printers of our time continue the use of the word token as a measure of their work. The full ream printed on both sides is rated as four tokens.

Composition Inking-rollers came in with cylinder printing-machines. The success of the new machines depended on the rollers. According to Hansard, they were first made by Forster of Weybridge, England, who derived his knowledge of the value of a mixture of glue and molasses as a receiver and transferrer of ink from the Staffordshire potteries, where it was used as an aid in the decoration of crockery.

The first printer in the United States to use composition rollers was Jonas Booth of New York, who made them in 1827.

328. Printing in Red. This paragraph 16 requires careful reading for a clear understanding of the crudity of the old method of printing in red and black. The pressman unlocked the form and picked out all words to be printed in red, filling up the vacant spaces with quadrats. He then printed the black form in the usual way. This done, he again unlocked the form and withdrew the quadrats that had been used to fill the spaces to be occupied by the words in red. At the bottom of each vacated space he put in bits of scabbard as underlays for the types in red. The thickness of the scabbards is not specified, but it

must be understood that they projected a nonpareil or more above other types. The form was then locked up, the red words being in their proper places. A new frisket was cut for this red form, and the red ink was beaten only on the types for red ink that projected above their mates. If the inking-balls slipped and inked any other part of the form, the sheet was protected from smear by the new frisket that admitted through it only the types intended for red. This treatment secured exact register (provided the paper had not shrunk in drying), but the rudely cut scabbards were an uncertain and variable support for the types, and usually made uneven printing. The caution to pull lightly and not print too hard was needed, for the difficulty of fairly inking and smoothly printing types so treated cannot be overrated.

331. Printing in Gold. Equally unworkmanlike, to our notion, are the directions about printing names in gold and silver. For this neither chase nor press was provided. The type as set in the stick was coated with hard varnish, and then pressed with the hands on wet paper against a blanket on the correcting-stone. This done, the gold or silver leaf was gently pressed on the print!

356. The Chapel. The common belief that the word "chapel" as the trade name of an association of printers in a printing-house is as old as Caxton, and that it was so given from a chapel attached to "the almonesrye at the reed pale" in Westminster Abbey, in or near which Caxton did his work, finds no warrant from Moxon. His explanation is more reasonable: ". . . . some great Churchman, or men, . . . for the Books of Divinity that proceeded from a Printing-house, gave it the Reverend Title of Chappel." I find no mention in any book of earlier date of the word chapel as a synonym for a fraternity of printers. Although England is regarded as the birthplace of guilds and fraternities, there is no old record of any association of printers as printers only. The Company of Stationers was an association dominated by booksellers who were more intent on getting and holding patents and privileges for the sale of books than on improving or developing typography. Roger

L'Estrange, the "surveyor of the Imprimerys," writing in 1663, said: "The stationers have subjected the Printers to be absolutely their slaves by so increasing their number that one half must either play the knave or starve." The customs of the chapel among journeymen probably came from Germany. Blades, in his "Depositio Cornuti Typographici" (London, 1885), shows that some of the customs of English printers closely resemble the older German customs that are fully described in this curious book.

Thomas Gent, printer, in his "Autobiography" (page 16, edition of 1832), thus describes his initiation in a London printing-house about the year 1714: "On my entrance amongst a number of men, besides paying what is called Ben-money [benvenue], I found, soon after, I was, as it were, to be dubbed as great a cuz as the famous Don Quixote . . . though the insipid folly thereof, agreeably to their strange harangues in praise of the protecting charms of cuzship . . . was not very agreeable to my hearing; yet, when the master himself insisted it must be done, I was obliged to submit to that immemorial custom, the origin of which they could not then explain to me. It commenced by walking round the chapel, (Printing rooms being called such, because first begun to be practised in one at Westminster Abbey;) singing an alphabetical anthem, tuned literally to the vowels; striking me, kneeling, with a broadsword; and pouring ale upon my head; my titles were exhibited much to this effect, 'Thomas Gent, baron of College Green, earl of Fingall, with power to the limits of Dublin bar, captain general of the Teagues near the Lake of Allen, and lord high admiral over all the bogs in Ireland.' To confirm which, and that I might not pay over again for the same ceremony, through forgetfulness, they allowed me godfathers, the first I ever had before, because the Presbyterian minister, at my christening, allowed none at his office; and these, my new pious fathers, . . . were the unreverend Mr. Holt and Mr. Palmer. Nay, there were witnesses also, such as Mr. Fleming, Mr. Gibbins, and Mr. Cocket, stanch journeymen printers."

In some printing-houses the jocularity and horse-play of the chapel meetings led to drunken revelries and a neglect of business that became intolerable. The chapel undertook to decide

who was a fair workman and who was not. The fairness or unfairness of the workman was determined by his compliance or non-compliance with the rule of an irresponsible chapel. In 1820 the master-printers of London were almost unanimous in opposing the chapel. Hansard says ("Typographia," pages 309, 310) that in most houses it was abolished.

Few of the old customs survive in America. The benvenue and the solaces are unknown even by name to the majority of journeymen compositors. The word chapel is still used: it defines an assembly of workmen in a composing-room who are members of a Typographical Union.

361. WAY-GOOSE. Hansard ("Typographia," foot-note, page 305) quotes Bailey's dictionary for the definition of the word: "Wayz-Goose, a stubble-goose, an entertainment given to journeymen at the beginning of winter." Wayz is the old English word for stubble. A wayz-goose was a known dainty, and the head dish at the annual feasts of the forefathers of our fraternity.

363. THE COMPANY OF STATIONERS is an old fraternity. Long before printing had been invented, the copyists, text-writers, and makers of devotional books of low price, like the Creed, Pater Noster, Ave Maria, etc., were associated, and sold their books in or near those streets of London that still retain the names of Pater Noster Lane, Ave Maria Lane, and Amen Corner. In the year 1403 they were formed into a guild and governed by a master and two wardens. In 1553 they owned and occupied a large hall near St. Paul's Church, which was burned in the great fire of 1666. A new hall was built, and finished in 1670. Hansard shows in his "Typographia" (facing page 237) a print of the building as it then appeared, in which the festivities described by Moxon were celebrated.